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PALO ALTO, CALIFORNIA
PUBLISHED BY THE UNIVERSITY
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FOURTH ANNUAL REGISTER

1894-1895

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*Died June 21, 1893.

†Resigned, Oct. 1894.

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M. S., Cornell University, 1872; M. D., Indiana Medical College, 1875; Ph. D., Butler University, 1878; LL. D., Cornell University, 1886. Instructor in Botany, Cornell University, 1871-72; Professor of Natural History, Lombard University, 1872-73; Principal of Appleton (Wis.) Collegiate Institute, 1873-74; Student and afterward Lecturer in Marine Botany, Anderson School at Penikese, 1874; Teacher of Natural History, Indianapolis High School, 1874-75; Professor of Biology, Butler University, 1875-79; Assistant to the U. S. Fish Commission, 1877-91; Professor of Zoology, Indiana University, 1879-85; President of Indiana University, 1885-91.

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A. B., Yale, 1853; A. M., 1856; Ph. D., University of Jena; LL. D., Michigan, Cornell, and Yale; L. H. D., Columbia College. Student at Berlin and Paris, 1853-56; Attaché of the American Legation at St. Petersburg, 1856; Professor of History and English Literature, University of Michigan, 1857-62; Member of the State Senate of New York, 1863-66; President of Cornell University and Professor of History, 1866-85; Envoy Extraordinary and Minister Plenipotentiary to the German Empire, 1879-81, to Russia, 1892-94.

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A. B. and LL. D., Miami University. Brevet Brigadier-General, U. S. A., 1865; U. S. Senator from Indiana, 1881-87; President of the United States, 1889-93.

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B. S., Cornell University, 1882; Ph. D., Indiana University, 1885. Assistant Geologist, Imperial Geological Survey of Brazil, 1875-78; Special Botanist for Thomas A. Edison in South America, 1880-81; Special Agent of the U. S. Department of Agriculture for Investigating Cotton and the Insects affecting it in Brazil, 1882-83; Topographical Geologist of the Geological Survey of Pennsylvania, Anthracite District, 1883-85; Professor of Geology, University of Indiana, 1885-91; State Geologist of Arkansas, 1887-92.

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*Absent during 1894-95.

OLIVER PEEBLES JENKINS, Professor of Physiology and Histology. *Cedro Cottage.*

A. B., Moore's Hill College, 1869; A. M., 1872; M. S., Indiana University, 1886; Ph. D., 1889. Professor of Natural Science, Moore's Hill College, 1876-82; Professor of Natural Science, Indiana State Normal School, 1883-86; Professor of Biology, De Pauw University, 1886-91.

JOHN HENRY COMSTOCK, Professor of Entomology. *15 Salvatierra St.*

B. S., Cornell University, 1874; Instructor in Entomology, Cornell University, 1873-77, Assistant Professor, 1877-82; U. S. Entomologist, at Washington, 1879-81; Professor of Entomology and General Invertebrate Zoology, Cornell University, since 1882.

MELVILLE BEST ANDERSON, Professor of English Literature. *19 Salvatierra St.*

A. M., Butler University, 1877. Professor of Modern Languages, Butler University, 1877-80; Professor of English Literature, Knox College, 1881-86; Professor of Literature and History, Purdue University, 1886-87; Professor of the English Language and Literature, University of Iowa, 1887-91.

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B. S., Carthage College, 1879; M. S., 1882. Student, University of Berlin, 1886-88; Professor of Physical Science, Mt. Morris College, 1879-82; Superintendent of Schools, Ogle County, Ill., 1882-86; Instructor in Physics and Chemistry, Englewood High School, 1888-90; Professor of Physical Science, Lake Forest University, 1890-91.

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CHARLES HENRY GILBERT, Professor of Zoology. *Palo Alto.*

B. S., Butler University, 1879; M. S., Indiana University, 1882; Ph. D., 1883. Assistant in Natural Sciences and Modern Languages, Indiana University, 1880-84; Professor of Natural History, University of Cincinnati, 1884-88; Professor of Zoology, Indiana University, 1888-91; Assistant to the U. S. Fish Commission, 1880-91.

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EWALD FLÜGEL, Professor of English Philology.
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Ph. D., University of Leipzig, 1886. Student, Universities of Freiburg and Leipzig, 1882-88; Privat Docent, University of Leipzig, 1888-92.

CHARLES BENJAMIN WING, Professor of Structural Engineering.
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C. E., Cornell University, 1886. Fellow in Civil Engineering, Cornell University, 1886-87, Instructor, 1887-90, Assistant Professor, 1890-91; Engineer, Pompton (N. J.) Powder Co., 1887, Phœnix Powder Co., Farmingdale, N. J., 1888; Assistant Engineer, Berlin (Conn.) Iron Bridge Co., 1889-90; Professor of Bridge and Hydraulic Engineering, University of Wisconsin, 1891-92.

FRANK ANGELL, Professor of Psychology.
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B. S., University of Vermont, 1878; Ph. D., University of Leipzig, 1891; L. H. D., University of Vermont, 1892. Teacher in Washington (D. C.) High School, 1880-87; Assistant Professor of Psychology, Cornell University, 1891-92.

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B. C. E. and B. S., University of Wisconsin, 1883; M. S., 1885; C. E., 1887. Morgan Fellow in Mathematics, Harvard University, 1884-85; Instructor in Engineering, University of Wisconsin, 1885-89; Assistant Professor of Mechanics, 1889-91; Professor of Theoretical and Applied Mechanics, 1891-92.

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B. C. E. and B. S., University of Wisconsin, 1883; M. S., 1885; C. E., 1887. Morgan Fellow in Mathematics, Harvard University, 1884-85; Instructor in Engineering, University of Wisconsin, 1885-89; Assistant Professor of Mechanics, 1889-91; Professor of Theoretical and Applied Mechanics, 1891-92.

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WILLIAM RUSSELL DUDLEY, Professor of Botany.
Lauro Hall.

B. S., Cornell University, 1874; M. S., 1876. Student, Summer School, Penikese, 1874, Harvard University, 1876, Universities of Strassburg and Berlin, 1887-88. Instructor in Botany, Cornell University, 1872-76, Assistant Professor, 1876-92.

AUGUSTUS TABER MURRAY, Professor of Greek.
Palo Alto.

A. B., Haverford College, 1885; Ph. D.. Johns Hopkins University, 1890. Fellow in Johns Hopkins University, 1887-88; Professor of Greek, Earlham College, 1888-90; Student, Universities of Leipsic and Berlin, 1890-91; Professor of Greek, Colorado College, 1891-92.

ALBERT PRUDEN CARMAN, Professor of Theoretical Physics.
33 Alvarado Row.

A. B., College of New Jersey, Princeton, 1883; A. M. and D. Sc., 1886. Fellow in Experimental Science, Princeton, 1883-84; Acting Instructor in Physics, 1884-85; Tutor in Mathematics, 1885-87; Student, University of Berlin, 1887-89; Professor of Physics and Applied Electricity, Purdue University, 1889-92.

JULIUS GOEBEL, Professor of Germanic Literature and Philology. *Menio Park.*

Ph. D., University of Tübingen, 1882. Student, University of Leipzig, 1879-81; Instructor in German, Johns Hopkins University, 1885-88; Editor *Belletristisches Journal*, 1888-92.

EDWARD ALSWORTH ROSS, Professor of Economic Theory and Finance. *5 Salvatierra St.*

A B., Coe College, 1886; Ph. D., Johns Hopkins University, 1891. Student, University of Berlin, 1888-89; Professor of Economics and Social Science, Indiana University, 1891-92; Associate Professor of Political Economy and Finance, Cornell University, 1892-93.

NATHAN ABBOTT, Professor of Law.
23 Salvatierra St.

A. B., Yale University, 1876; LL. B., Boston University, 1880. Professor of Law, University of Michigan, 1891-92; Professor of Law, Northwestern University, 1892-94.

FREDERIC A. C. PERRINE, Professor of Electrical Engineering. *Palo Alto.*

A. B., College of New Jersey, Princeton, 1883; A. M., 1886; D. Sc., 1885. Assistant Electrician, U. S. Electric Lighting Co., Newark, N. J., 1885-88; Manager Insulated Wire Dept., John A. Roebling's Sons Co., Trenton, N. J., 1888-92; Treasurer, Germania Electric Co., Boston, Mass., 1892-93.

JOHN ERNST MATZKE, Professor of the Romanic Languages.
Alondra Hall.

A. B., Hope College, 1882; Ph. D., Johns Hopkins University, 1888. Professor of French, Bowdoin College, 1889-90; Professor of the Romance Languages, Indiana University, 1890-91; Associate in the Romance Languages, Johns Hopkins University, 1891-93.

CHARLES NEWTON LITTLE, Professor of Mathematics.
16 Alvarado Row.

A. B., University of Nebraska, 1879; Ph. D., Yale University, 1885. Instructor in Mathematics and Civil Engineering, University of Nebraska, 1880-84, Associate Professor of Civil Engineering, 1885-90, Professor of Civil Engineering, 1890-93.

***EDWARD HOWARD GRIGGS**, Professor of Ethics.
[*In Europe.*]

A. B., Indiana University, 1889; A. M., 1890. Student, University of Berlin, 1894-95; Instructor in English Literature, Indiana University, 1889-91, Professor of General Literature, 1892-93.

GEORGE MANN RICHARDSON, Professor of Organic Chemistry.
18 Alvarado Row.

A. C., Lehigh University, 1886; Ph. D., Johns Hopkins University, 1890. Instructor in Quantitative Chemical Analysis, Lehigh University, 1888-89; Fellow in Chemistry, Johns Hopkins University, 1889-90; Instructor in Organic Chemistry, Lehigh University, 1890-91.

JAMES OWEN GRIFFIN, Professor of German.
32 Alvarado Row.

Graduate of the Pennsylvania State Normal School, 1873. Teacher in Pennsylvania State Normal School, 1873-74; Principal Unadilla (N. Y.) Academy, 1874-79; Student, University of Göttingen, 1879-80; Principal of Delaware Academy (Delhi, N. Y.), 1880-85; Instructor in German, Cornell University, 1885-91, Registrar, 1890-91.

WALTER MILLER, Professor of Archæology.
College Terrace.

A. M., University of Michigan, 1884. Student, University of Leipzig, 1884-85, 1889-91; Member of the American School of Classical Studies at Athens, 1885-86; Instructor in Greek, University of Michigan, 1886-87, Instructor in Latin and Sanskrit, 1887-88, Acting Assistant Professor, 1888-89; Senior, Royal Archæological Seminary, University of Leipzig, 1890-91; Associate Professor of Greek, University of Missouri, 1891-92.

WILLIAM HENRY HUDSON, Professor of English Literature.
Alondra Hall.

Assistant, Library of Sion College, London, 1885-86; Librarian, City Liberal Club, London, 1889-90; Cataloguer, President White Library, Cornell University, 1890-91, Assistant Librarian, Cornell University, 1891-92.

RUFUS LOT GREEN, Professor of Mathematics.
3 Salvatierra St.

B. S., Indiana University, 1885; A. M., 1890. Instructor in Mathematics, Indiana University, 1885-86; Student, Johns Hopkins University, 1886-87; Professor of Pure Mathematics, Indiana University, 1887-93.

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*Absent on leave, 1894-95.

WILLIAM JOSEPH HUSSEY, Professor of Astronomy. *20 Alvarado Row.*

B. S. and C. E., University of Michigan, 1889. Assistant in the Nautical Almanac Office, Washington, D. C., 1889; Instructor in Mathematics, University of Michigan, 1889-91, Instructor in Astronomy and Acting Director of the Observatory, 1891-92.

ARLEY BARTHLOW SHOW, Associate Professor of European History. *Palo Alto.*

A. B., Doane College, 1882; B. D., Andover Theological Seminary, 1885; A. M., Doane College, 1892. Pastor Congregational Church, Waco, Neb., 1885-87; Professor of History and English Literature, Doane College, 1887-92.

ORRIN LESLIE ELLIOTT, Secretary and Registrar. *24 Alvarado Row.*

Ph. B., Cornell University, 1885; Ph. D., 1890. Fellow in History and Political Science, Cornell University, 1885-86, Instructor in English, 1886-91, Assistant Registrar and President's Secretary, 1890-91.

VERNON LYMAN KELLOGG, Associate Professor of Entomology. *16 Alvarado Row.*

B. S., University of Kansas, 1889; M. S., 1892. Student, Cornell University, 1891, University of Leipsic, 1893; Assistant Professor of Entomology, University of Kansas, 1890-93, Associate Professor, 1893-94.

HENRY RUSHTON FAIRCLOUGH, Associate Professor of Greek and Latin. *9 Salvatierra St.*

A. B., University of Toronto, 1885; A. M., 1886. Fellow in Classics, University College, Toronto, 1883-84; Classical and English Master, Brockville High School, 1884-86; Graduate Scholar, Johns Hopkins University, 1886-87, Fellow, 1887; Lecturer in Greek and Ancient History, University College, Toronto, 1887-93; Classical Examiner in University of Toronto and Trinity University.

BOLTON COIT BROWN, Associate Professor of Drawing and Painting. *Palo Alto.*

B. P., Syracuse University. 1885; M. P., 1889. Instructor in Freehand Drawing, Cornell University, 1885-88; Principal, Fine Art Department, Government Art School, and Parkdale Art School, Toronto, 1889-90; Instructor in Art, Buchtel College, 1890-91.

JAMES PERRIN SMITH, Associate Professor of Mineralogy and Paleontology. *8 Salvatierra St.*

A. M., Vanderbilt University, 1886; Ph. D., University of Göttingen, 1892. Assistant Geologist and Chemist, Arkansas Geological Survey, 1887-90.

ALPHONSO GERALD NEWCOMER, Associate Professor of English. *Palo Alto.*

A. B., University of Michigan, 1887; A. M., Cornell University, 1888. Instructor in Latin and French, Knox College, 1889-91.

HENRY BURROWES LATHROP, Associate Professor of English. *Palo Alto.*

A. B., Harvard University, 1889. Assistant Professor of English, Hobart College, 1889-90; Instructor in English, Harvard University, 1890-92.

LIONEL REMOND LENOX, Associate Professor of Analytical Chemistry. *Castro.*

Ph. B., Columbia College, 1888. Assistant Chemist, Bethlehem Iron Co., 1887; Instructor in Chemistry, Lehigh University, 1888-91; Chemist Ordnance Department, U. S. N., Washington, D. C., 1891-92.

WILBUR WILSON THOBURN, Associate Professor of Ethics. *Palo Alto.*

A. B., Allegheny College, 1881; A. M., 1884; Ph. D., 1888. Teacher of Natural Science, Pennsylvania State Normal School, 1881-84; Professor of Geology and Botany, Illinois Wesleyan University, 1884-88; Professor of Geology and Biology, University of the Pacific, 1888-91.

MARY SHELDON BARNES, Assistant Professor of History. *12 Alvarado Row.*

A. B, University of Michigan, 1874. Teacher of Greek, Latin, and History, Oswego (N. Y.) Normal School, 1875-76; Professor of History, Wellesley College, 1877-79.

***EMORY EVANS SMITH**, Assistant Professor of Horticulture. *Palo Alto.*

Editor California *Florist and Gardener*, 1888-89; Associate Editor *Pacific Rural Press*, 1889; Editor California *Fruit Grower*, 1890-92; Secretary California State Floral Society, 1888-93; President Florists' Club of California, since 1891.

SAMUEL JACQUES BRUN, Assistant Professor of French. *College Terrace.*

B.-ès-S., Montpelier, France, 1876. French Master, Ackworth School, England, 1879-80; Instructor in French, Haverford College, 1881-82; Instructor in French, Cornell University, 1882-86.

***JOHN ANTHONY MILLER**, Assistant Professor of Mathematics.

A. B., Indiana University, 1890; A. M., Leland Stanford Jr. University, 1893 Superintendent of Schools, Rockville, Ind., 1890-91.

DAVID ELLSWORTH SPENCER, Assistant Professor of History. *Palo Alto.*

B. L., University of Wisconsin, 1887; A. M., Harvard University, 1891. Student in Law, University of Wisconsin, 1887-88, Instructor in Rhetoric, 1888-89, Instructor in History, 1889-90; Assistant in History, Harvard University, 1891-92; Acting Assistant Professor of History, University of Michigan, 1892-93.

ARTHUR BRIDGMAN CLARK, Assistant Professor of Drawing and Architectural Draughting. *College Terrace.*

B. Ar., Syracuse University, 1888; M. Ar., 1891. Director of Trades Schools and Instructor in Drawing, New York State Reformatory, Elmira, N. Y., 1888-89; Instructor in Architecture, Syracuse University, 1889-92.

***FRANK MACE McFARLAND**, Assistant Professor of Histology. [*In Europe.*]

Ph. B., De Pauw University, 1889; A. M., Leland Stanford Jr. University, 1893. Assistant in Biology, De Pauw University, 1888-89; Professor of Biology, Olivet College, 1889-92.

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* Absent on leave, 1894-95.

MARGARET M. WICKHAM, Assistant Professor of German.
3 Lasuen Ave.

A. B., Vassar College, 1886. Teacher of Latin and German, Cascadilla School (Ithaca, N. Y.), 1886-88; Student in German, Hanover and Berlin, 1888-89, University of Leipzig, 1889-90; Instructor in German, Cleveland College for Women, 1890-91, Associate Professor, 1891-92.

WILLIAM STUART SYMINGTON, Jr., Assistant Professor of Romanic Languages. *18 Alvarado Row.*

A. B., Johns Hopkins University, 1891. University Scholar, Johns Hopkins University, 1891-92, '92-93, Graduate Student and Assistant in French, 1891-94.

MARY ROBERTS SMITH, Assistant Professor of Social Science.
Palo Alto.

Ph. B, Cornell University, 1880; M. S., 1882. Teacher of History, Washington, D. C., High School, 1882-84; Teacher of History, Private School, Cincinnati, O., 1884-86; Instructor in History and Economics, Wellesley College, 1886-90, Registrar and Secretary of Board of Examiners, 1889-90.

MERRITT EUGENE TAYLOR, Assistant Professor of Physics.
Lauro Hall.

B. S., Northwestern University, 1883; M. S., 1884. Assistant in Chemistry, Northwestern University, 1883-84, Instructor in Mathematics, 1884-86; Student at Universities of Berlin, Zürich, and Johns Hopkins, 1886-89; Electrician, Incandescent Lamp Co., Chicago, 1889-92.

GEORGE CLINTON PRICE, Assistant Professor of Zoology.
Palo Alto.

B. S., De Pauw University, 1890. Student in Biology, Johns Hopkins University, 1890-92.

JOHN CHARLES LOUNSBURY FISH, Assistant Professor of Civil Engineering. *Palo Alto.*

C. E., Cornell University, 1892. Instructor in Civil Engineering, Cornell University, 1892-93.

GEORGE KRIEHN, Assistant Professor of Social and Economic History. *Palo Alto.*

A. B., William Jewell College, 1887; Ph. D., University of Strassburg, 1892. Student in History and Art, Berlin, Freiburg, Zürich, Strassburg, Florence, 1887-92; Fellow by Courtesy, Johns Hopkins University, 1892-93, Instructor in History, 1893-94.

STEWART WOODFORD YOUNG, Assistant Professor of Chemistry. *2 Alvarado Row.*

B. S., Cornell University, 1890. Assistant in Chemistry, Cornell University, 1890-91; Instructor in Chemistry, Swarthmore College, 1891-93.

ROBERT JUDSON ALEY, Acting Assistant Professor of Mathematics. *Palo Alto.*

A. B., Indiana University, 1888; A. M., 1890. Instructor in Mathematics, Indiana University, 1887-88; Professor of Mathematics, Vincennes University, 1888-91; Professor of Mathematics, Indiana University, since 1891.

WESTEL WOODBURY WILLOUGHBY, Acting Assistant Professor of Political Science. *Alondra Hall.*

A. B., Johns Hopkins University, 1888; Ph. D., 1891. Fellow in History and Politics, Johns Hopkins University, 1890-91; Attorney-at-Law, Washington, D. C., since 1892.

CHARLES ELLWOOD COX, Instructor in Mathematics. *College Park.*

A. B., Haverford College, 1880; A. M., Leland Stanford Jr. University, 1893. Principal of Friends Academy, Le Grand, Iowa, 1880-85; Professor of Mathematics, University of the Pacific, 1886-91.

HERMAN DE CLERCQ STEARNS, Instructor in Physics. *Palo Alto.*

A. B., Leland Stanford Jr. University, 1892: A. M., 1893.

***DANIEL WILLIAM MURPHY**, Instructor in Physics. [*In Europe.*]

A. B., Leland Stanford Jr. University, 1892; A. M., 1893. Student, University of Berlin, 1894-95.

CHARLES WILSON GREENE, Instructor in Physiology. *14 Alvarado Row.*

A. B., Leland Stanford Jr. University, 1892; A. M., 1893.

MARGARET E. SCHALLENBERGER, Instructor in Education. *6 Salvatierra St.*

Graduate California State Normal School, San Jose, 1880. Teacher in State Normal School, San Jose, 1887-92, Principal of Training Department, 1892-93.

WALTER ROBERT SHAW, Instructor in Botany. *Palo Alto.*

A. B., Leland Stanford Jr. University, 1892; A. M., 1894.

CLELIA DUEL MOSHER, Instructor in Hygiene and Organic Training. *Palo Alto.*

A. B., Leland Stanford Jr. University, 1893; A. M., 1894.

HAROLD HEATH, Instructor in Histology. *14 Alvarado Row.*

A. B., Ohio Wesleyan University, 1893. Assistant in Biology, Ohio Wesleyan University, 1891-93; Professor of Natural Science, University of the Pacific, 1893-94.

IRENE HARDY, Instructor in English. *19 Salvatierra St.*

A. B., Antioch College, 1885. Teacher of English and Latin, Preparatory School, Antioch College, 1874-76; Head of English Department and Teacher of Entomology, Oakland (Cal.) High School, 1877-83, Teacher of English, 1887-92.

HENRY COFFINBERRY MYERS, Instructor in Chemistry. *Mariposa Hall.*

Ph. D., Strassburg, 1891; F. C. S., London, 1891. Consulting Chemist, Haskin Wood Vulcanizing Co., New York, 1892-93.

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*Absent on leave, 1894-95.

JESSICA S. VANCE, Instructor in English. *San Jose.*

Ph. B., University of the Pacific, 1884.

KARL G. RENDTORFF, Instructor in German. *Menlo Park.*

A. M., Leland Stanford University, 1894. Student, University of Giessen, 1884-85, University of Kiel, 1885-91.

***GUIDO HUGO MARX**, Instructor in Mechanical Engineering.

M. E., Cornell University, 1893. With Gleason Machine Tool Co., Rochester, N. Y., 1893-94; with Bement and Miles, Philadelphia, 1894-95.

CHARLES KELLEY JENNESS, Acting Instructor in Economics. *Lauro Hall.*

A. B., Leland Stanford Jr. University, 1892; A. M., 1894.

ASSISTANTS.

GEORGE ARCHIBALD CLARK, President's Secretary. *14 Alvarado Row.*

B. L., University of Minnesota, 1891.

ANNA LOUISA BROWN, Artist of the Hopkins Laboratory. *24 Alvarado Row.*

B. P., Syracuse University, 1889.

CLARK WILSON HETHERINGTON, Assistant in the Gymnasium. *11 Salvatierra St.*

ORRISON VERT EATON, Assistant Registrar. *Lauro Hall.*

MAUD MARCH, Assistant in the Gymnasium. *Roble Hall.*

JOHN COPELAND KIRTLAND, JR., Assistant in Latin. *Palo Alto.*

A. B., Hobart College, 1890; A. M., 1893.

LUCIEN HOWARD GILMORE, Assistant in Physics. *Palo Alto.*

A. B., Leland Stanford Jr. University, 1894.

GERTRUDE NORTH BROWN, Assistant in Education, in charge of the Kindergarten. *24 Alvarado Row.*

Graduate Philadelphia Training School for Kindergartners, 1891; Kindergartner, West Philadelphia Ethical Society, 1891-92, New York City Kindergarten Association, 1892-93.

JULIUS EMBRET PETERSON, Foreman of the Forge. *College Terrace.*

**Beginning September, 1895.*

EDWARD SOULE, Foreman of the Woodworking Shop. *Palo Alto.*

JOHN KINLAY WIGHT, Curator of the Art Museum. *Mayfield.*

A. B., Leland Stanford Jr. University, 1893.

FLORA HARTLEY, Assistant Curator of the Zoological Museum. *Palo Alto.*

RAY LYMAN WILBUR, Laboratory Assistant in Physiology. *Encina Hall.*

CLARA STOLTENBERG, Laboratory Assistant in Physiology. *Roble Hall.*

FREDERICK JOHN TEGGART, Librarian of the Hopkins Railway Library. *14 Alvarado Row.*

A. B., Leland Stanford Jr. University, 1894.

CHARLES JAMES NEWMAN, Library Assistant. *Encina Hall.*

JOHN MASON ROSS, Library Assistant. *Encina Hall.*

JACKSON ELI REYNOLDS, Library Assistant. *Mayfield.*

ALFRED FRANCIS WILLIAM SCHMIDT, Cataloguer. *Encina Hall.*

LOUISE MAITLAND, Cataloguer. *10 Salvatierra St.*

PERCY ERWIN DAVIDSON, Cataloguer. *Adelante Villa.*

LECTURER.

FREDERICK LOUIS OTTO ROEHRIG, Lecturer on Oriental Philology. *San Francisco.*

Ph. D., Leipzig; M. D., Paris. Assistant Professor of French, and Professor of Sanskrit and Modern Oriental Languages, Cornell University, 1869-86.

OTHER OFFICERS.

ELLEN FRANCES THOMPSON, Mistress of Roble Hall. *1 Roble Hall.*

CHARLES EDWARD HODGES, Resident Architect. *22 Alvarado Row.*

ROBERT HENRY MOORE, Chief Engineer. *Palo Alto.*

JOHN J. LEWIN, Electrician. *Palo Alto.*

GEORGE ADDERSON, Overseer of Buildings. *Encina Hall.*

CHARLES F. MOORE, University Plumber. *Menlo Park.*

CHARLES C. WALLEY, University Carpenter. *Mayfield.*

J. A. MARTIN, Forester. *Palo Alto.*

STANDING COMMITTEES.

Ways and Means:—Professors STILLMAN, HOWARD, BRANNER, FLÜGEL, and MARX.

Students' Affairs:—Professors ROSS, GRIFFIN, A. W. SMITH, and THOBURN.

Admission of Students:—Professors MURRAY, E. BARNES, A. W. SMITH, HUSSEY, and the REGISTRAR.

Doubtful Cases:—Professors RICHARDSON, GILBERT, MURRAY, GRIFFIN, and the REGISTRAR.

Encina and Roble Halls:—Professors MARX, STILLMAN, and WOOD.

Registration of Studies:—Professors GILBERT, WOOD, GREEN, KELLOGG, and the REGISTRAR.

Entrance Requirements:—Professors SANFORD, MILLER, ANDERSON, GOEBEL, and JENKINS.

Petitions:—Professors WING, ALLARDICE, and J. P. SMITH.

Intercollegiate Affairs:—Professors BRANNER, ANDERSON, MATZKE, ABBOTT, and HUDSON.

Chapel Exercises:—Professors MILLER, SHOW, and THOBURN.

Receptions:—Professors MATZKE, PERRINE, CARMAN, GOEBEL, and CAMPBELL.

Publications:—Professors HOWARD, FLÜGEL, WOODRUFF, DUDLEY, and LITTLE.

Graduation:—Professors PEASE, WARNER, LITTLE, A. W. SMITH, and the REGISTRAR.

University Extension:—Professors HUDSON, ROSS, and E. BARNES.

Summer School:—Professors BARNES, FAIRCLOUGH, and STILLMAN.

Public Exercises: — Professors WOODRUFF, SHOW, and BROWN.

Resolutions:—Professors FLÜGEL, HOSKINS, and PERRINE.

Athletics:—Professors ANGELL, WOOD, and RICHARDSON.

Hopkins Laboratory:—Professors JENKINS, GILBERT, and DUDLEY.

Organization and Administration.

FOUNDATION.

The founding at Palo Alto of "a university for both sexes, with the colleges, schools, seminaries of learning, mechanical institutes, museums, galleries of art, and all other things necessary and appropriate to a university of high degree," was determined upon by the Hon. Leland Stanford and Jane Lathrop Stanford in 1884. In March of the year following the legislature of California passed an Act providing for the administration of trust funds in connection with institutions of learning. November 14, 1885, the Grant of Endowment was publicly made, in accordance with this Act, and on the same day, the Board of Trustees held its first meeting, in San Francisco. The work of construction was at once begun, and the cornerstone laid May 14, 1887, the nineteenth anniversary of the birth of Leland Stanford, Jr. The University was formally opened to students October 1, 1891.

NAME AND PURPOSE.

The idea of the University, in the words of its founders, "came directly and largely from our son and only child Leland; and in the belief that had he been spared to advise as to the disposition of our estate, he would have desired the devotion of a large portion thereof to this purpose, we will that for all time to come the institution hereby founded shall bear his name, and shall be known as The Leland Stanford Junior University."

The object of the University, as stated in its Charter, is "to qualify students for personal success and direct usefulness in life," and its purposes, "to promote the public welfare by exercising an influence in behalf of humanity and civilization, teaching the blessings of liberty regulated by law, and inculcating love and reverence for the great principles of government as derived from the inalienable rights of man to life, liberty, and the pursuit of happiness."

LOCATION.

The University is located on the Palo Alto estate in the Santa Clara Valley, thirty-three miles southeast of San Francisco, on the Coast Division of the Southern Pacific Railway. The estate consists of eight thousand four hundred acres, partly lowland and partly rising into the foothills of the Sierra Morena. On the grounds are the residence of the founders and an extensive arboretum containing a great variety of shrubs and trees. The Bay of San Francisco lies about three miles east of the University buildings, and across the bay the Monte Diablo Range rises to the height of over four thousand feet. The Lick Observatory, crowning Mt. Hamilton, the highest of the range, is plainly visible. To the southwest, between the valley and the ocean, is the heavily wooded Santa Cruz Range, two thousand to four thousand feet in height.

The Santa Clara Valley is one of the most attractive portions of the state in climate, in natural beauty, and in the fertility and adaptiveness of its soil to all the varied fruits of California. The characteristics of the climate are its evenness of temperature, its pure and bracing air, and its freedom alike from the fogs and harsh winds of the coast and from the oppressive summer heat of the interior valleys. In winter the mercury rarely falls below 30°, and the average midday temperature is about 55°; in summer the average midday temperature is between 75° and 80°, while the nights are always cool. The rainfall of about twenty inches is chiefly confined to the months from December to April inclusive.

ENDOWMENT.

The property conveyed to the University, in addition to the Palo Alto estate, consists of the Vina Estate, in Tehama County, of fifty-nine thousand acres, of which about four thousand acres are planted in vines, and the Gridley Estate, in Butte County, of twenty-two thousand acres, devoted mainly to the raising of wheat. By the will of Mr. Stanford the University receives two and a half million dollars, but this bequest is not yet available.

BUILDINGS.

In arranging the buildings and grounds the plan has been to conform them to the peculiar climatic conditions of California, and to provide for indefinite expansion, without crowding or distortion. A series of quadrangles, to be erected as the needs of the University demand, will furnish facilities for all general University work. Surrounding these will be various detached buildings for miscellaneous purposes, and the University cottages, with carefully laid out streets and grounds.

The central group of buildings will constitute two quadrangles, one entirely surrounding the other. Of these the inner quadrangle, with the exception of the chapel, is now completed. Its twelve one-story buildings are connected by a continuous open arcade, facing a paved court five hundred and eighty-six feet long by two hundred and forty-six feet wide, or three and a quarter acres. The buildings are of a buff sandstone, somewhat varied in color. The stonework is of broken ashlar with rough rock face, and the roofs are covered with red tile. The architectural *motif* is to be found in the old Spanish Missions of California.

The grounds to the east and west of the central quadrangles have been reserved for six smaller quadrangles, three on either side. Behind the central quadrangles will be the workshops of the mechanical engineering department, the boiler and power houses, and the mechanical laboratories—of which the shops, foundry, and boiler house are now completed.

The dormitories are east and west of the quadrangle. *Encina Hall*, for young men, is at the east and occupies a ground area of 312 x 150 feet. It is four stories high, built of the same material as the quadrangle, and decorated with end arcades, a central arched porch, and mosaic work. It is provided with electric lights, hot and cold water, steam heat, suitable furniture, bath rooms on each floor, and has accommodations for 315 students. *Roble Hall*, for young women, is at the west. It is of concrete, is about a third the size of Encina Hall, and will accommodate 100 students.

Encina and *Roble Gymnasiums* are substantial frame buildings, equipped with the necessary apparatus and appliances for physical training.

The *Leland Stanford Junior Museum*, a concrete building, 313 x 156 feet, including wings, is situated a quarter of a mile from the quadrangle, and on the west side of the Palo Alto avenue. At the main entrance, four large columns form the principal feature of the facade. The vestibule is 45 x 56 feet, and 70 feet high, and is faced with marble. The Museum contains the archæological and art collections of the University.

The collection made by Leland Stanford, Jr., between 1880 and 1884, and intended as the nucleus of a museum to be established in San Francisco, has been placed here and his own arrangement reproduced. The collection includes especially Egyptian bronzes, Greek statuettes, and Greek and Roman glass of interest and value. One room is devoted to memorials of Senator Stanford. The Cesnola collection contains five thousand pieces of Greek and Roman pottery and glass. The Egyptian collection comprises casts of statuary and bas reliefs, mummies, scrolls, scarabees, etc., collected by Brugsch Bey, Curator of the Gizeh Museum. It contains, besides, a collection of embroideries, the gift of Mr. Timothy Hopkins, which is made up of linen dating from the sixth to the twenty-first dynasty, and also Coptic embroidery. The American collection is made up principally of mound relics; there is also a collection of stone implements from Copenhagen, Denmark. The Chinese and Japanese collection comprises bronzes, arms, china, lacquer, specimens of wood carving, cabinets, embroideries, musical instruments, etc. The Corean collection, the gift of Mr. Hopkins, contains costumes, household goods, cabinets, etc. Mr. Hopkins has also placed in the Museum a collection of ancient and modern coins and medals. The fine arts collections have been made mainly by Mrs. Stanford. There is also the Anna Lathrop Hewes collection of paintings, statuary, mosaics, etc., and a collection of pictures in oil and water colors presented by Mr. Thomas Welton Stanford, of Australia.

LIBRARY.

One building of the quadrangle is at present devoted exclusively to the library. It has a shelving capacity of thirty-five thousand volumes, and the reading-room will accommodate one hundred and twenty-five students.

The library now numbers twenty-three thousand volumes and six thousand pamphlets. The most notable gift to the library has been the valuable collection of railway books presented by Mr. Timothy Hopkins, of San Francisco. This special collection is unusually rich in materials for the study of the early history of railways in Europe and America, and the donor has made generous provision for the maintenance and increase of the collection until it shall be practically complete.

In addition to the University library, various large collections in San Francisco can be made available to a greater or less extent. The Mechanics' Institute and Mercantile are subscription libraries, and the Public, a circulating library to residents of the city, can be used for reference. The Sutro Library, founded by Mr. Adolph Sutro, and containing about two hundred and fifty thousand volumes, chosen with particular reference to the needs of investigators, is accessible to graduate students and students engaged in special lines of investigation. It is especially rich in mediæval publications and in books and pamphlets illustrative of the history of Europe. There are also at the University several large private libraries to which advanced students have access.

SCIENTIFIC COLLECTIONS.

It is intended to bring together in the museums of the University a full representation of the natural history and mineral products of California, collections of all books, pamphlets, photographs, and maps bearing upon the early history of the West, and full collections of Indian antiquities and illustrations of aboriginal life. It is desired to receive donations from all persons who are interested in the work and who have material of value to the museums. All collections sent in this way will be carefully labelled and preserved, and the name of the donor will be kept on record. Messrs. Wells, Fargo & Co. generously offer to transport such gifts to the University free of charge, and have instructed their officials "to receive and promptly forward such offerings as may be tendered from time to time."

TRUSTEES.

The general management and control of the institution is vested in a board of twenty-four trustees, chosen for life, of whom fifteen constitute a quorum. The charter provides that the Founders, during their lives, shall "perform all the duties and exercise all the powers and privileges enjoined upon and vested in the trustees."

FACULTY AND COUNCIL.

The Faculty consists of the President, professors, associate professors, assistant professors, and instructors, aided by non-resident lecturers, assistants, and other officers. Its routine work is divided among the following committees: Ways and Means; Entrance Requirements; Admission of Students; Students' Affairs; 'Doubtful Cases'; Encina and Roble Halls; Registration of Studies; Petitions; Graduation; Publications; Chapel Exercises; Receptions; Public Exercises; Resolutions; Athletics; Summer School; the Hopkins Laboratory; University Extension; Intercollegiate Affairs.

The University Council consists of the President, professors, including the librarian, and associate professors. To the Council are entrusted the determination of requirements for admission, and for the various degrees; the recommendation of candidates for graduation; and the selection of Fellows. It also acts as an advisory body on any questions of general policy that may be submitted to it by the President or Trustees.

GOVERNMENT.

In the government of the University the largest liberty consistent with good work and good order will be given to the students. The University is not a reform school; its bounty is intended for the earnest and industrious student, and the indolent or unworthy will not be retained in the institution.

RELIGIOUS SERVICES.

Religious instruction is given in accordance with the provision of the Charter which prohibits sectarian instruction, but requires the teaching of the "immortality of the soul, the existence of an all wise and benevolent Creator, and that obedience to His laws is the highest duty of man." Voluntary chapel exercises are held daily, and a sermon or address on some religious or ethical subject is given every Sunday morning by some clergyman or layman invited from abroad, or by some member of the Faculty.

A Students' Christian Association, a Young Men's Christian Association, and a Young Women's Christian Association have been organized and hold regular meetings. The Associations have compiled a *Hand-Book* containing special information relating to the details of University life at Palo Alto, including library regulations, registration rules, boarding places, etc. This handbook will be mailed to prospective students on application to the Registrar.

STUDENT ORGANIZATIONS.

In addition to the Christian Associations noted above, numerous general student organizations have been formed for mutual assistance and improvement in various lines. Two college journals, the *Daily Palo Alto* and the weekly *Sequoia*, are published by the students.

DEPARTMENTS.

The following Departments have been established: Greek; Latin; Archæology; Germanic Languages; Romanic Languages; English Language and Literature; Psychology; Ethics; Education; History; Economics and Social Science; Law; Mathematics; Astronomy; Physics; Chemistry; Botany; Entomology; Horticulture; Physiology; Hygiene and Physical Training; Zoology; Geology; Drawing and Painting; Mining Engineering; Civil Engineering; Mechanical Engineering; Electrical Engineering.

The Hopkins Laboratory of Natural History, located at Pacific Grove, on the Bay of Monterey, is a branch of the biological work of the University.

Admission and Graduation.

CONDITIONS OF ADMISSION.

Candidates for admission must be at least *sixteen* years of age, or if special students, *twenty*. They must present certificates of good moral character, and if from other colleges or universities, must bring letters of honorable dismissal.

1. ADMISSION ON EXAMINATION.

For meeting the entrance requirements of the University, candidates are offered a choice of twenty-two subjects. These subjects are all reduced to the unit of a high school year, making twenty-eight credits, and placed on an exact equality, except that subject 1 (English) is required of all applicants. *Twelve* credits are necessary for admission to full standing, and these may be made up of English (2 credits) and such other subjects (aggregating 10 credits) as may be selected by the candidate.

1. English (2).
2. Elementary Algebra (2).
3. Plane Geometry.
4. Solid Geometry (½).
5. Trigonometry (½).
6. Advanced Algebra.
7. Physics.
8. Chemistry.
9. Physiology.
10. Botany.
11. Zoology.
12. Drawing.
13. American History.
14. English History.
15. Grecian and Roman History.
16. English Literature.
17. Spanish.
18. French (2).
19. German (2).
20. Elementary Latin (2).
21. Advanced Latin (2).
22. Greek (2).

Solid Geometry and Trigonometry together count one credit; English, Elementary Algebra, French, German, Elementary Latin, Advanced Latin, and Greek, two credits each; all others, one credit each.

The following will indicate the amount of preparation necessary in the various subjects. Full equivalents of the specific work outlined will be accepted in all subjects. The High School year here assumed is based roughly on an average of four recitation exercises of three-quarters of an hour each, per week, in each subject.

1. **English.**—**a.** *Poetry and the Drama:* Shakspere's Merchant of Venice and Julius Cæsar; Scott's Lady of the Lake; Whittier's Snow-Bound; Longfellow's Evangeline. *Prose*: Irving's Sketch-Book; Thackeray's Newcomes; the Sir Roger de Coverley Papers from the Spectator; Scott's Quentin Durward; Macaulay's Essay on Addison; Macaulay's Life of Johnson.

[Substantial equivalents, such as the books prescribed by the University of California or by Harvard University, will be accepted instead of any or all of the books in this list.]

b. Every applicant will also be required to undergo a test of his ability to write exercises correct in spelling, punctuation, sentence-structure, and paragraphing. He may be called upon, for instance, to write a business letter upon some assigned subject, to put into his own language an essay, the material of which is provided him, or to write from dictation; or his examination papers in other subjects may be submitted to the examiner in English; in short, he may be subjected to any fair test of his mastery of the English language for the practical purposes of life. (The equivalent of two years in the High School.)

[Students who are conditioned in English 1 *b* will be given an opportunity to make up their deficiency in voluntary classes under private tutors approved by the University. These tutors will charge a fee not exceeding ten dollars a semester.]

2. **Elementary Algebra.**—Fundamental operations, factors, highest common factor, lowest common multiple, fractions, equations of first degree, fractional and negative exponents, surds, equations of the second degree in one or more variables, ratio and proportion, the progressions. Charles Smith's Elementary Algebra, or Wentworth's School Algebra, or Bowser's Academic Algebra, or an equivalent. (The equivalent of one and a half years in the High School.)

3. **Plane Geometry.**—A complete course in Plane Geometry such as is contained in Chauvenet's, or Wentworth's, or Bowser's Geometry. (The equivalent of one year in the High School.)

4. **Solid Geometry.**—A complete course in Solid Geometry such as is contained in Chauvenet's, or Wentworth's, or Bowser's Solid Geometry. (The equivalent of one-half year in the High School.)

5. **Trigonometry.**—An elementary course in Plane Trigonometry such as is contained in Wells' Plane Trigonometry or in Lock's Elementary Trigonometry. (The equivalent of one-half year in the High School.)

6. **Advanced Algebra.**—Combinations and permutations, convergence of series, binomial theorem, logarithms, exponential and logarithmic series, partial fractions, and a short treatment of determinants. Chapters i–xxiv and xxxi of Charles Smith's Treatise on Algebra, or an equivalent. (The equivalent of one year in the High School, in addition to the elementary course in Algebra.)

7. **Physics** —The equivalent of a year's work in experimental Physics. This should cover the amount of laboratory practice outlined in such a manual as Allen's Laboratory Physics, Hall & Bergen's Physics, Gage's Laboratory Manual, Chute's Physics, or Chute's Physical Laboratory Manual. It is preferred that the study begin by the experimental method and that recitations from a text should follow, rather than precede the working out of the experiments by the pupils.

8. **Chemistry.**—Beside the usual text-book and recitation work, each student should have a course in the laboratory, where he performs the experiments for himself. The amount of laboratory work desired cannot be obtained with less than four hours per week for one school year spent in actual laboratory work. It is preferred that the laboratory work be entirely upon *general*, rather than partly upon *analytical* chemistry. The course required is comprised in Richardson's Laboratory Manual and Principles of Chemistry, or in Remsen's Introduction to the Study of Chemistry. The inorganic portion of Roscoe's Elementary Chemistry, or of Elliot & Storer's Elementary Chemistry, with a proper course of laboratory experiments such as is given in Smith & Keller's Laboratory Manual, are also recommended as covering the course required.

It is the purpose of the Department of Chemistry to admit those who receive credit in subject 8 to the second year's work in Chemistry in the University. For this reason any course short of an approximate equivalent of the first year's work in the University will not be acceptable.

9. **Physiology.**—The elements of human physiology and hygiene, the equivalent of Martin's Human Body. The text-book work should be accompanied by experiment, dissection of animals and organs, and a certain amount of study of the tissues with the microscope. (The equivalent of one year in the High School.)

In placing Physiology in the list of entrance subjects the fact that Physiology is not generally taught in the High School is recognized. Still it is thought that candidates who come from High Schools where the subject is pursued for at least a year, should have the opportunity of presenting the work for entrance to the University. This explanation may make it clear that candidates who have taken only the work in elementary physiology and hygiene done in the grammar or intermediate grades are not prepared to offer the subject as one of the entrance subjects to the University. The elementary physiology and hygiene of the grammar grades, in this regard, is in the same category as are the other subjects studied in the grammar grades, such as arithmetic and geography, which are assumed as preliminary to the subjects offered for entrance.

10. **Botany.**—A knowledge of plants and plant-structure and development obtainable from experimental work in connection with Bessey's or Campbell's Botany, or some similar work. (The equivalent of a full year in the High School, of which two-thirds at least should be laboratory work.)

In stating the requirements for students presenting themselves for examination in botany, the main thing had in mind was that the work should be of a practical nature; that is, that the study should be done mainly from specimens and not from books. It must be borne in mind that botany is a department of biology, and means something more than the mere collecting and naming of specimens. A study of the growth and development of the forms studied is of the highest importance, and so far as possible should be made a prominent feature in the work. A good plan for most schools is to select a few typical representatives of the principal groups of plants, e.g., examples of the green, red, and brown algae, moulds, mildews, lichens, liverworts, mosses, ferns, etc., as well as representatives of the great divisions of the flowering plants. Examples of all of these are everywhere accessible, and a knowledge of the main characteristics of each of the principal divisions of plants will be expected of the student. The forms selected are to be studied as exhaustively as circumstances will admit, and students should be expected to keep a careful record of their work in the form of notes and drawings made directly from the specimens as they are studied.

If possible the student should be allowed the use of a compound microscope, but when this is not practicable, microscopic demonstrations by the instructor are indispensable. The laboratory work of the students may be supplemented by such explanatory and text-book work as may be deemed necessary, but this must be understood to supplement and not to replace the laboratory work.

11. **Zoology.**—A knowledge of the structure and relationships of a number of types of animals, gained by study and dissection of specimens in the laboratory. Marshall & Hurst's Practical Zoology is recommended as a laboratory guide. (The equivalent of a full year in the High School.)

12. **Drawing.**—The ability to make from nature a correct and expressive outline drawing of a landscape, including buildings; or, the ability to make a good and workmanlike light and shade drawing from a group of colored still-life objects; or, the ability to make a reasonably accurate and workmanlike life-size outline of a head from nature; or, the ability to make a good light and shade study of a cast of the head or full figure. (The equivalent of one full year in the High School, or of five hours of University work.)

No student will be credited in Drawing, (1) who cannot draw geometric models in true perspective, (2) who cannot outline clearly and accurately, (3) who cannot shade evenly and truly with some one of these materials: the brush, the pencil, the pen, the charcoal. Candidates are expected to provide themselves with drawing materials for the examination.

13. **American History.**—A thorough knowledge of Sheldon's Studies in American History (Boston 1891), Thwaites' Colonies (Epochs of American History Series, New York and London, 1891), and Macy's Our Government (revised edition, Boston, 1890). These should be studied in connection topically. MacCoun's Historical Geography of the United States will prove a valuable aid; and for further reading, Fiske's Civil Government, the American Statesmen Series, and the American Commonwealth Series are recommended. (The equivalent of one year in the High School, in addition to the ordinary grammar school course.)

14. **History of England.**—The equivalent of Gardiner's Student's History of England (New York and London, 1890), and Fonblanque's How We Are Governed. These may be supplemented by readings in Green's History of the English People and the Epochs of Modern History Series. (The equivalent of one year in the High School.)

15. **Grecian and Roman History.**—The equivalent of Fyffe's History of Greece (History Primers), Allen's Short History of the Roman People (Part II of Allen & Myers' Ancient History, Boston, 1891), and Tighe's Development of the Roman Constitution (History Primers). For further topical study, read the Epochs of Ancient History Series. (The equivalent of one year in the High School.)

16. **English Literature.**—Complete familiarity, both as to substance and as to form, is expected, with the contents of the books mentioned below. Preparation should embrace questions of grammar, of metre, and of rhetorical form, and some attention should be given to so much of literary history and biography as naturally connects itself with the works read. Candidates will be tested upon their ability to quote freely and accurately, to paraphrase intelligently, and to outline symmetrically. *Prose*: (*a*) Burke's Speeches on the American War and Letter to the Sheriffs of Bristol, edited by A. J. George; or (*b*) Genung's Rhetorical Analysis, in connection with some such work as A. S. Hill's Principles of Rhetoric. *Poetry*: Hales's Longer English Poems, omitting Shelley's Adonais. *Word Derivation*: The etymological notes to the selections from Spenser and Milton in Hales's Longer English Poems. The derivations in question should all be carefully verified in Webster's International Dictionary. (The equivalent of one year in the High School.)

Candidates who have done systematic work in other books than those enumerated may be accepted upon sustaining a satisfactory examination.

17. **Spanish.**—Manning, Practical Spanish Grammar (Henry Holt & Co., New York). Special attention should be paid to the absolute mastery of the inflections and conjugations and the principal parts of verbs. Knapp's Spanish Readings; Valdés, José, novela de costumbres maritimos (Madrid, 1885). (The equivalent of one year in the High School.)

18. **French.**—Whitney's Practical French Grammar, Part I

(Henry Holt & Co., New York), with the written exercises. Special stress should be laid upon the absolute and accurate acquisition of the forms of the language, and especially of the irregular verbs. Systematic training in pronunciation on the basis of Koschwitz, Les Parlers Parisiens (Welter, Paris). Super's French Reader, Parts II and III. Jules Verne, Michel Strogoff (ed. Lewis, Henry Holt & Co., New York). Labiche, Le Voyage de Monsieur Perrichon (Jenkins, New York). Halévy, L'Abbé Constantin (Henry Holt & Co.) (The equivalent of two years in the High School.)

19. **German.**—A satisfactory preparation will require: the ability to translate easy German prose and verse at sight; an accurate knowledge of the principles of grammar, embracing especially inflections and syntax, the composition of words, the force of prefixes and suffixes, and the relation of the English and the German consonantal changes; also the ability to translate easy prose from English into German. This preparation would be represented approximately, in reading, by Brandt's or Whitney's Reader, and the careful study of one or more modern dramas; in grammar, by Brandt's, Joynes-Meissner's, Collar-Eysenbach's, or Whitney's Grammar; and in German prose, by the first twenty-six exercises in Harris' German Prose Composition. (The equivalent of two years in the High School.) All applicants are expected to present a statement from their former teacher of the amount of German read and the text-books used.

20. **Elementary Latin.**—The requirements for Elementary Latin include accuracy in pronunciation, a thorough knowledge of the forms, familiarity with the simpler principles of syntax, a vocabulary of from 1500 to 2000 common words, and the ability to translate easy prose at sight and to write simple sentences.

These attainments ought to be secured from the careful study of an elementary text-book and about 120 pages of classical prose, together with *daily* exercise in oral or written composition and occasional practice at sight reading. The examinations in Latin Composition for 1895 and 1896, will be based upon the third and fourth books of Cæsar's Gallic War and the first two orations of Cicero against Catiline.

21. **Advanced Latin.**—The requirements for Advanced Latin include the ability to translate at sight the simpler portions of Cicero's orations and Virgil's Æneid, familiarity with the prin-

ciples of Latin hexameter, and the power to translate a passage of connected English based on Cicero.

These attainments ought to be secured from the careful study of four or five orations of Cicero and six books of Virgil's Æneid, if supplemented by daily exercises in composition in connection with the Cicero, and by extensive practice in sight reading.

22. **Greek.**—Grammar, the inflections, the formation of words, and the essential points of the syntax; Xenophon, Anabasis, books I–IV; Homer, Iliad, books I–II; Prose Composition, ability to write easy connected prose (Collar & Daniell's text-book is recommended); translation at sight of easy prose. (The equivalent of two years in the High School.)

A thorough understanding of the ordinary forms of syntax is expected, and the student should be able to translate into *idiomatic* English. A passage of simple prose is selected for sight translation, and a brief English passage for translation into Greek. It is expected of every student that he be able to read Greek aloud without stumbling.

PARTIAL STANDING.

Candidates may be admitted to partial standing in the University upon securing at least *ten* entrance credits, if in the judgment of the Faculty they are qualified to go on with regular University work. All deficiencies must be made up before a student can be admitted to full standing.

TIME OF EXAMINATION.

Examinations in all entrance subjects are held at the beginning and at the end of the school year. In May these examinations will be held at Palo Alto and simultaneously at other appointed places; in September, at Palo Alto only. No entrance examinations will be held at any other time. Specimen examination papers may be obtained on application to the Registrar.

Entrance examinations are held in the following order. For places and dates, see calendar, page 5.

First Day.—Physiology, 8:30—10:30; Elementary Algebra, 10:30—12:30; Plane Geometry, 1:30—3:30; English, 3:30—6:00.

Second Day.—Advanced Algebra, Spanish, and Physics, 8:30—12:30; German and Greek, 10:30—12:30; Solid Geometry, English History, and French, 1:30—3:30; Elementary Latin, 3:30—6:00.

Third Day.—Advanced Latin, Chemistry, and Botany, 8:30—10:30; Trigonometry and English Literature, 10:30—12:30; American History and Zoology, 1:30—3:30; Grecian and Roman History and Drawing, 3:30—6:00.

Candidates for admission, may, if they prefer, take a part of their examinations a year before they propose to enter; but no account will be taken of the result of such examinations unless at least four credits are secured. These four credits may all be secured in May, or part in May and part in September, or all in September, at the option of the candidate

II. ADMISSION ON CERTIFICATE.

The University does not agree, in advance, to exempt the graduates of any school from all entrance examinations. Recommendations from the principal of any reputable preparatory school will be considered, and examinations waived in all entrance subjects fairly covered in the applicant's course of study, subject to the following conditions:

1. The applicant must have completed a full course in the school and have been duly graduated.

2. The applicant must be specifically recommended by the principal in the subjects in which exemption is granted.

3. The Faculty reserve the right to require an examination in any recommended subject, if for any reason the work done is deemed insufficient or unsatisfactory.

4. For the present, certificates will not be accepted in English Composition, Latin Prose Composition (except by special arrangement), Physiology, Botany, Zoology, and Drawing.

5. In Physics and Chemistry, recommendations must be accompanied by the laboratory note books of the applicant. These note books should contain the actual notes taken in the laboratory, not copies, and must be certified by the teacher.

6. Recommended graduates of the San Jose, Los Angeles, and Chico State Normal Schools, may be admitted, without examination, except in English 1*b*, to provisional undergraduate standing, such standing subject to revision after one year's attendance.

Exemptions from entrance examinations are granted on satisfactory recommendations as a matter of mutual convenience, and to save applicants from unnecessary worry; at the same time it is not considered that the requirement of an examination is necessarily a hardship, and the University will not hesitate to prefer examinations in all cases where there is doubt either as to the quantity or quality of the work offered.

Recommendations will be considered at any time of the year, but since, in general, no one can be assured of admission to the University without examination in one or more subjects, it is important that certificates be forwarded as early as possible.

Blanks for admission on certificate may be obtained from the Registrar.

III. ADMISSION AS SPECIAL STUDENTS.

Persons at least twenty years of age, who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students, without passing the usual entrance examinations, on the recommendation of the professor under whom the specialty is to be taken. But the Faculty may impose any test, by examination or otherwise, that it may deem advisable. Candidates are advised to correspond directly with the professor in whose department they desire to work. Special students are subject to the same regulations as regular undergraduates, regarding amount of university work, etc.; and they may become candidates for graduation on fulfilling the University requirements, including those for entrance. Blank applications for admission as special students may be obtained from the Registrar.

A failure on the part of any special student to maintain a good standing in the special studies to which he is admitted will at once sever his connection with the University.

IV. ADMISSION TO ADVANCED STANDING.

Students from other institutions of recognized collegiate rank, who present letters of honorable dismissal, may be admitted to such standing and upon such terms as the Faculty may deem equitable. Every such candidate is required to present, along with a catalogue of the institution in which he has studied, a full statement, duly certified, of the studies he has completed, including studies passed or credited at entrance.

Students from other institutions, whose credentials are satisfactory, are usually admitted, without examination, to a minimum standing of one year less than that to which they are entitled at the institution from which they come. At the same time they are admitted to such classes as their preparation seems to warrant. After one semester's residence, if their work has been thoroughly successful and of sufficiently high grade, the terms of admission may be readjusted, and such additional credit given as may then be deemed just by the Faculty; but no such student can finally be given advanced credit for more than three years' work (ninety hours toward graduation).

V. ADMISSION TO GRADUATE STANDING.

Graduates of this University, and of other institutions of recognized collegiate rank, may be admitted to graduate standing in the University upon presentation of diplomas or equivalent credentials. They may become candidates for advanced degrees upon fulfilling the conditions prescribed by the Faculty. In case they become candidates for the baccalaureate degree, the question of hours required for graduation may be waived and the degree conferred on the satisfactory completion of the major subject, provided such students average fifteen hours of work per semester while in the University, and complete at least thirty hours of University work. Graduate students, not candidates for any degree, may be admitted, upon the approval of the major professor, to such work as their previous training seems to warrant.

REGISTRATION.

At the beginning of each semester each student must register in person at the Registrar's office; and no student, having been once admitted to the University, will be allowed to register after the close of Registration Day, except by permission of the Faculty. At the beginning of the collegiate year, students register for the work of the whole year; and no changes can be made except by permission of the Faculty. No credit will be allowed for work not registered, except by special permission of the Faculty; and no petition for such credit will be considered when such permission would give the student more than eighteen hours for the semester. *Fifteen* hours constitute an average semester's work. Students may register for less that *thirteen* or more than *eighteen* hours only by permission of the Faculty, but a student who has 'failed' or been 'conditioned' in any subject in the semester immediately preceding, may not register for more than *fifteen* hours, except by special permission of the Faculty through the appropriate committee.

Every hour for which credit is given is understood to represent approximately, for the average student, three hours of actual work per week through one semester. Thus, in lecture or recitation work, one hour is allotted to the lecture or recitation and two hours for preparation or subsequent reading and study on the part of the student. Where the time is wholly occupied with drawing, field, or laboratory work, three full hours per week through one semester are expected of the student for each hour that counts toward graduation, Where the drawing, field, or laboratory work is supplemented by systematic outside reading or experiment, under the direction of the instructor, such a reduction may be made in actual drawing, field, or laboratory time, as seems just to the department concerned.

Students who find it necessary to leave before the close of the year, and who expect to return, and students desiring to be absent for one or more semesters, should obtain leave of absence from the Faculty.

GRADUATION.

Candidates may present themselves for graduation at the end of either semester.

I. FIRST DEGREE.

The Degree of *Bachelor of Arts* (A. B.) is granted to students who have satisfactorily completed the equivalent of four years' work of fifteen hours of lecture or recitation weekly, or a total of one hundred and twenty hours, and who have also satisfied the requirements in major and minor subjects.

Each student shall select as his major subject or specialty the work of some one professor. This professor shall have the authority to require such student to complete this *major* subject, and also as *minor* subjects such work in other departments as the professor may regard as necessary or desirable collateral work. Such major and minor subjects taken together will not exceed the equivalent of five recitations per week, or one-third of the student's time for the four years of undergraduate work.

With these exceptions, all the undergraduate work in all departments is elective. The student may freely choose for such elective work any subject taught in the University, which his previous studies have prepared him to undertake.

The professor in charge of the major subject of any student is expected to act as adviser to the student in educational matters, and the recommendation of such professor is necessary to graduation.

II. ADVANCED DEGREES.

Every applicant for an advanced degree shall file at the Registrar's office, not later than the beginning of the semester preceding that in which the degree is sought, a formal application including a statement of the proposed course of study. This application must be approved by the major professor, and upon acceptance by the Faculty the applicant is admitted to candidacy for such advanced degree. It is advisable that such application be made as early as possible in the student's course. Where a thesis is required it shall be upon a subject approved by the major professor, and shall be presented in its final form at least six weeks before the close of the semester in which the degree is sought. Accepted theses shall be bound in a uniform style and deposited in the University library. No advanced degree will be conferred except upon the recommendation of the appropriate Faculty committee.

The Degree of *Master of Arts* (A. M.) is conferred upon graduates of this University, and upon others who have had an equivalent training elsewhere, on the satisfactory completion, in residence, of one year of graduate work, beyond the baccalaureate requirements of the department in which the degree is sought, and on the presentation of an approved thesis, or the passing of a satisfactory examination, or both. The course of study for the Master's degree is intended to correspond in amount and character to the first year's work for the Doctor's degree.

In the departments of applied science the professional Degree of *Engineer* is conferred upon graduates of this University, and upon others who have had an equivalent training elsewhere, on the satisfactory completion, in residence, of one year of professional study beyond the baccalaureate requirements of the department in which the degree is sought, and on the presentation of an approved thesis, showing ability to do independent work.

The degree of *Doctor of Philosophy* (Ph. D.) is conferred upon graduates of this University, and upon others who have had an equivalent training elsewhere, on the satisfactory completion of at least three years of graduate work, beyond the baccalaureate requirements of the department in which the degree is sought, under the following conditions:

1. The degree is given only on the ground of advanced scholarship and the ability to do independent work in some special line, and not for merely faithful study for a prescribed time or course, nor for miscellaneous study. Three years represent the minimum time in which the degree can be obtained, and often a longer period of study will be necessary.

2. Graduate work done elsewhere may be accepted in place of resident study in this University; but in no case will private study without sufficient guidance, or pursued at a distance from libraries or laboratories or other

necessary facilities, be accepted as an equivalent; and no degree will be granted to any person who has not spent at least the last year of such study in residence at this University.

3. The course of study shall embrace one major subject and one or two minors in related departments. The minor subject or subjects shall represent approximately one-third of the course of study; except that such minor subjects may be waived, on the recommendation of the department in which the major subject is taken and with the approval of the Faculty, whenever the general preparation or special needs of the candidate make such a course seem desirable.

4. The candidate must present a thesis of such a character as shall display power of original and independent investigation and constitute an actual contribution to knowledge. He must guarantee the printing of the thesis, in a form approved by the Faculty, within one year after the degree is conferred, and must deposit one hundred copies in the University library.

5. The candidate must sustain such final examinations in major and minor subjects as may be prescribed by the departments in which studies are taken, and also shall submit to such tests or examinations as may be required by the special committee of the Faculty. This special committee jointly with the department in which the major work is taken shall be responsible for the fitness of the candidate. The committee for this purpose shall be appointed as soon as possible after the candidacy is announced and at least a semester previous to the time of conferring the degree.

No honorary degrees are given.

EXPENSES OF THE STUDENT.

Tuition in all departments of the University is free. In 1895–96 registration fees will be charged as follows, payable on registration: Graduate students (except regularly approved candidates for advanced degrees), and all undergraduate students, *ten dollars* per semester; special students, *fifteen dollars* per semester. In addition, students in laboratory course pay for the materials which they use. The deposits required in advance are different for the different courses, ranging from two to twenty dollars per semester.

Encina Hall and Roble Hall are managed by the students on the co-operative plan. The present year the cost of living, including board, furnished rooms, light, heat, and attendance, has amounted to twenty-two dollars per month. Students furnish their own linen, blankets, towels, and napkins. Rooms may be reserved in advance by depositing two dollars with the Registrar.

In the two villages of Palo Alto and Mayfield, each about a mile from the University, good rooms and board, in private houses can be obtained at from eighteen to twenty-five dollars per month. Houses can also be rented for the use of clubs and societies. Special commutation tickets are issued by the Southern Pacific Company, and students living in towns on the line of the railway, from San Francisco to San Jose, can easily go to and from the University daily. Omnibuses connect with all trains at Palo Alto and Mayfield. A careful list of available boarding places outside the Halls, compiled by the Christian Associations, may be consulted at the Registrar's office during the opening week in September, and new students will find no difficulty in securing accommodations after their arrival.

The expenses of the student, exclusive of clothing and railway fares, need not exceed $225 to $300 per year.

SELF-SUPPORT OF STUDENTS.

No provision has been made for affording direct pecuniary assistance to students, but a considerable number manage in one way or another to earn the whole or a part of their expenses while attending the University. Such opportunities occur in the line of office and laboratory assistance, personal services of numerous kinds, and the management of various student enterprises. Nothing, however, can be assured in advance, and no one is advised to come to the University without resources for at least one semester.

The *Students' Guild* is a regularly incorporated association for mutual assistance in cases of sickness or other unusual emergency. Its resources are mainly the voluntary contributions of students and Faculty, fifty cents per semester being the ordinary subscription.

Departments and Courses of Instruction.

[*Courses for 1894-95, with Announcements for 1895-96.*]

GREEK.

Professors MURRAY and MILLER, and Associate Professor FAIRCLOUGH.

UNDERGRADUATE COURSES.

The undergraduate courses in Greek are intended to train the student carefully in the language itself, to acquaint him with the authors studied as representing the great departments of literature, and to enable him to approach intelligently the problems of Greek life and Greek thought. The instruction in the lower classes is given chiefly by means of recitations, but as the student advances these are supplemented by lectures.

It will be seen that provision is made for those who have had no Greek before coming to the University.

1. **Elementary.** *5 hrs., both semesters.* (MURRAY.)

Grammar; translation of easy prose; Greek composition. After the essential grammatical forms have been mastered passages of continuous prose are taken up for translation and, as soon as is practicable, the Anabasis. The student is made familiar with the ordinary forms of syntax, and exercises in writing Greek are regularly introduced.

2. **Herodotus and Homer.** *3 hrs., 1st semester.* (MILLER.)

Selections from Herodotus and the Phaeacian Episode of the Odyssey.

Course 2 is open to those who have offered subject 22 on entrance, or who have completed course 1 in the University.

3. **Plato, selections.** *3 hrs., 2d semester.* (MILLER.)

A continuation of course 2. The Apology and Crito, or the Phædo, will be read.

4. **Prose Composition and Sight Translation.** *2 hrs., both semesters.* (FAIRCLOUGH.)

Xenophon's Hellenica or Cyropædia will be taken up for sight reading, and the prose exercises will be based upon the text read. Course 4 is required of all students in courses 2 and 3 who are making Greek their major study.

5. **Homer.** *3 hrs., 1st semester.* (MURRAY.)

A critical study of the Iliad and Odyssey with discussions and papers on Homeric topics. Open to those who have completed courses 2 and 3, or an equivalent.

[Course 5 will not be given in 1895.]

6. **Euripides, etc.** *3 hrs., 1st semester.* (FAIRCLOUGH.)

The Alcestis of Euripides, the Prometheus of Aeschylus, and selections from Aristophanes (the Acharnians or Clouds) will be be read.

Open to those who have completed courses 2 and 3.

7. **Demosthenes.** *3 hrs., 2d semester.* (FAIRCLOUGH.)

The Olynthiac and Philippic Orations. A continuation of course 6.

8. **Prose Composition and Sight Translation.** *2 hrs., both semesters.* (MURRAY.)

Open only to those who have completed course 4, or an equivalent, but required of major students before graduation.

9. **Greek Tragedy.** *3 hrs., both semesters.* (MURRAY.)

The Prometheus Bound, the Œdipus Tyrannus, and the Iphigenia Taurica will be read in the class-room, and other plays will be assigned for private study. Lectures on the ancient and modern drama will form a part of the work.

[Course 9 will not be given in 1895–96.]

10. **Aeschines and Demosthenes.** *3 hrs., 1st semester.* (MILLER.)

The orations on the Crown will be read with especial reference to the character of Demosthenes as statesman and orator.

11. **Thucydides VI and VII.** *3 hrs., 2d semester.* (MILLER.)

GRADUATE COURSES.

The graduate courses in Greek are intended especially for those who are working for advanced degrees or who are looking forward to teaching. They differ from the undergraduate courses announced above, in that they claim a larger share of the student's time and lead him to a broader and more comprehensive knowledge of the language and literature. He is introduced to higher philological work and is trained through critical studies for original research.

The center of the work is the Greek seminary—made up of the director and such students as satisfy him of their fitness for the work. The seminary meets weekly for the critical interpretation of some Greek author, the different members, in turn, filling the post of interpreter. Topics for investigation are assigned, and papers prepared by the members are read and discussed.

Members of the seminary are expected to supplement their critical work by wide reading, and lectures on the author or authors under discussion are given by the director.

12. **The Greek Seminary.** *2 hrs., both semesters.* (MURRAY.)

In 1895–96 the work of the seminary will center in Thucydides, Book IV being taken up for interpretation. In connection with Thucydides the plays of Aristophanes will be studied from the historical side.

[Students should provide themselves in advance with the Classen-Steup edition of Thucydides, with Stahl's text edition, and with Bergk's or Meineke's Aristophanes. Thucydides IV, edited by Rutherford (Macmillan), should be in the hands of all, as it will be made the basis of a study of Thucydides' text. All these books may readily be obtained of B. Westermann & Co., 812 Broadway, New York, or through any importer.]

13. **Greek Historiography.** *1 hr., 1st semester.* (MURRAY.)

Lectures on the development of historical writing among the Greeks.

14. **Historical Lectures.** *1 hr., 2d semester.* (MURRAY.)

Lectures on the inner history of Athens during the Peloponnesian war.

15. **The Athenian Constitution.** *1 hr., 1st semester.* (MURRAY.)

The interpretation of Aristotle's work, with a discussion of the question of its genuineness.

[Students should have Kenyon's 3rd edition, or that by Sandys (Macmillan).]

16. **The Speeches in Thucydides.** *1 hr., 2d semester.* MURRAY.)

A series of monthly lectures intended for all students in Latin and Greek will be given by the instructors in these departments.

These lectures will treat of subjects in the line of art, life, language, customs, which cannot well be brought into the routine work of the class-room, but which nevertheless are of importance to the classical scholar. They will be considered supplementary to the regular courses.

LATIN.

Professors PEASE and MILLER, Associate Professor FAIRCLOUGH, and Assistant KIRTLAND.

UNDERGRADUATE COURSES.

The aim of the undergraduate courses in Latin is to give the student a somewhat systematic knowledge of the language and its development, an acquaintance with the main features of the literature, and some idea of the Roman civilization. The instruction is given chiefly by means of recitations and informal lectures. As the student advances in his Latin studies he is encouraged more and more to make use of the library, and to become familiar with the standard books of reference.

1. **Cicero and Vergil.** *5 hrs., both semesters.* (KIRTLAND.)

Cicero, five orations; Vergil, six books of the Æneid; exercises in Latin composition and sight reading.

This course is planned for those who have passed in entrance subject 20. It is regarded as preparatory to the work required of major students in Latin.

2. **Cicero, Livy, and Terence.** *3 hrs., both semesters.* (FAIRCLOUGH.)

Cicero, De Senectute; Livy, books XXI-II; Terence, Phormio.

Open to students who have passed in course 1, or in subject 21 of the entrance requirements. After a hurried grammatical review, the chief aim will be to gain as great facility as possible in reading.

3. **Translation at Sight and Latin Composition.** *2 hrs., both semesters.* (MILLER.)

This course is open to students who are taking course 2, and is required of major students in Latin. Training in the rapid reading of Cicero's De Amicitia, Livy, book I, and Nepos will be given one hour a week, and the other hour will be devoted to Latin composition in connection with the Cicero and Livy of course 2, and to the study of the private life of the Romans in connection with the Terence.

4. Horace, Velleius Paterculus, and Tacitus. *3 hrs., both semesters.* (MILLER.)

Horace, selections from the Satires, Odes, and Epistles; Velleius' account of Tiberius, and selections from the Annals of Tacitus.

This course, open to those who have passed in course 2, will aim to give a comprehensive view of these authors and their place in the literature. Attention will be directed especially to the subject matter and style.

5. Translation at Sight and Latin Composition. *2 hrs., both semesters.* (FAIRCLOUGH.)

This is open to students who have taken course 3. One hour a week the class will read Cicero's Second Philippic, and selections from Ovid's Metamorphoses, the Germania of Tacitus, and Pliny's Letters. Special effort will be made to get at the Roman point of view and to grasp the meaning in the order of the Latin. The exercises for translation into Latin will be prepared to suit the needs of the class.

6. Latin Comedy. *3 hrs., 1st semester.* (FAIRCLOUGH.)

This course will treat of the development of Latin comedy, of the early theatre, and the method of presenting a play. The Trinummus of Plautus will be studied with particular reference to the early forms, constructions, and metres; and that followed by the more rapid reading of the Menaechmi, Captivi, Miles Gloriosus, and the Adelphœ of Terence.

[Course 6 will not be given in 1895–96, but students of advanced standing may, by permission, register for course 15 instead.]

7. The Letters of Cicero and Pliny. *3 hrs., 2d semester.* (PEASE.)

The aim will be to get a view of Cicero and his times from the original sources, to see some of the causes for the breaking down of the Republic, and to become familiar with official procedure in the judicial and legislative bodies. Special attention will be paid to the familiar style of Cicero's letters, and a few letters of Pliny will be read in contrast.

8. Catullus, Tibullus, and Propertius. *2 hrs., 1st semester.* (PEASE.)

Selections from these authors will be studied, largely with reference to the thought and artistic form, and compared with similar poems of other writers. Other selections will be read in translation in order to gain a comprehensive view of their works as a whole.

[Course 8, alternating with course 10, will not be given in 1895–96.]

9. **Roman Society in the First Century.** *2 hrs., 2d semester.* (FAIRCLOUGH.)

Illustrative selections will be read from the Satires of Juvenal and the Epigrams of Martial. Supplementary reading will be assigned in various writers on that period.

[Course 9, alternating with course 11, will not be given in 1895–96.]

10. **Lucretius and Vergil.** *3 hrs., 1st semester.* (FAIRCLOUGH.)

Selections from the De Rerum Natura will be read in Latin and the rest in translation, attention being paid to the philosophic thought and its poetic treatment. A similar study will be made of the Georgics, with special reference to Vergil's dependence on Lucretius.

11. **Quintilian.** *2 hrs., 2d semester.* (FAIRCLOUGH.)

In connection with the study of the subject matter of books X and XII, considerable attention will be paid to literary criticism and to the history of Roman literature.

12. **Teachers' Course.** *2 hrs., 1st semester.* (PEASE.)

This is a course of lectures and recitations intended for those who expect to engage at once in preparatory teaching. The lectures will treat of the aims and methods of teaching preparatory Latin, the books and other helps serviceable to teachers, and such practical subjects as pronunciation, sequence of tenses, indirect discourse, and the like. There will also be practice in writing Latin and in teaching. Portions of the authors suitable for preparatory work will be read in class, and the members will serve in turn as teachers under the supervision of the instructor. Opportunities will also be given to visit preparatory classes in the vicinity and reports of the observations will be presented by each member.

[Course 12 will be given again in 1896–97.]

13. **Greek and Roman Mythology.** [See under Archæology, course 2.]

GRADUATE COURSES.

The graduate courses in Latin are intended primarily for students who are looking forward to teaching as their profession. They aim to give a wider acquaintance with the language and literature than is usually afforded in undergraduate courses, and to offer training in philological criticism and in the methods of scientific research. The work centers in the Seminary, a body composed of the director and such graduate students as shall satisfy the director of their fitness for the work; in this, the students present the results of their study in the way of interpretations, reports, reviews, and original papers. The director selects an author or group of authors for the year's work, encourages a wide reading of Latin on the part of the student, usually with some particular end in view, assigns separate portions of the author in hand for minute and critical study as the basis of the interpretation, suggests topics for investigation, guides the members in their private work, and presides at the regular meetings. The work of the Seminary is supplemented by lectures on related subjects.

[During the year 1894-95 the Seminary, with a membership of sixteen, met two hours a week for the study of Vergil. The meetings were devoted to a study of some of the Eclogues, the interpretation of portions of the Æneid, and the presentation of papers embodying the results of the year's investigations. The principal papers thus presented were on the Authenticity of the Culex; the sources, date, and style of the Civis; a study of the common syllables in Vergil; Elision in Vergil's Hexameters, the so-called subjunctive by attraction in Vergil; a study of Vergil's use of final vowels with variable quantity; the style and authorship of the Apocolocyntosis or Ludus de Morte Claudii. In addition to the regular work of the Seminary, Professor Pease offered a course of lectures on the development of Epic Poetry and another on the Latin Cases. He also conducted a series of practical exercises in writing and translating Latin at dictation, and presided at the meetings of the Journal Club.]

14. **Latin Seminary.** *2 hrs., both semesters.* (PEASE.)

In 1895-96 the Seminary will be occupied with the study of Latin Comedy. The meetings will be devoted to the interpretation of passages from the Andria and Miles Gloriosus by the members in turn, and to papers containing the results of their special investigations.

[Students should provide themselves in advance with Dziatzko's edition of Terence, Leipzig, 1884 (M. 1.20), and Gœtz's edition of the Miles Gloriosus, Leipzig, 1890 (M. 6). Klotz' edition of Terence containing the commentaries of Donatus and Eugraphius is recommended; also some of the annotated editions of particular plays, e. g., Spengel's And. and Adel., Dziatzko's Phorm. and Adel., Meisoner's And., Brix' Capt., Men., Mil. Glor., and Trin., Lorenz' Mil. Glor., Sonnenschein's Rud., etc.

A good working library for early Latin will be accessible to the students, containing all the standard editions of Plautus and Terence and several hundred dissertations on these authors.]

15. **Latin Comedy.** *3 hrs., both semesters,* (PEASE.)
A series of lectures on the development of Latin Comedy, followed by the reading in class of all the plays of Plautus and Terence.

16 **Practical Exercises in Oral and Written Translation.** *2 hrs., 1st semester.* (PEASE.)

17. **Latin Sounds.** *1 hr., 1st semester.* (PEASE.)
An introduction to the study of Historical Grammar on the basis of Stolz' Einleitung und Lautlehre (Historische Grammatik der Lateinischen Sprache) Leipzig, 1894 (M. 7.) Each student should be provided with a copy.

18. **Latin Syntax.** *1 hr., 2d semester.* (PEASE.)
Lectures on the subordinate sentence.

19. A **Journal Club** will meet weekly to report on articles of interest in current periodicals.

ARCHÆOLOGY.

Professor MILLER.

The work will center around the collections of ancient art in the Leland Stanford Junior Museum. These comprise a large number of original works and copies from Italy, Greece, and Asia Minor, including a large part of the Cesnola collection from Cyprus. The work in this department will be in the line of the historical development of art.

1. **Archæological Seminary.** *2 hrs., both semesters.* (MILLER.)
Cypriote Antiquities, a study of Cyprus and its remains. The basis of study will be the collection in the Museum, supplemented by the publications of Di Cesnola and Ohnefalsch-Richter. The purpose of the course is to gain such an understanding of Greek and Roman life and art as these monuments will give.

2. Greek and Roman Mythology. *2 hrs., 2d semester.* (MILLER.)
A study of the Greek and Roman myths by means of ancient sculptures and vase-paintings. Lectures and recitations, with Gayley's Classic Myths and Guerber's Myths of Greece and Rome for collateral study.

[Course 2 may be expected again in 1896-97.]

SANSKRIT.

1. Beginner's Course in Sanskrit. *2 hrs., both semesters.* (MILLER.)

Primarily for graduates. Recitations from Whitney's Sanskrit Grammar and Perry's Primer, accompanied by lectures upon the comparative phonetics of the Sanskrit, Greek, Latin, and Germanic languages, and followed by the interpretation of selections from Lanman's Sanskrit Reader.

[The beginner's course will be given again in 1896–97.]

2. Sanskrit Drama. *2 hrs., both semesters.* (MILLER.)
Kalidasa's Cakuntala will be interpreted, with readings from the Mrichchhakatikâ and lectures on the Old Indian drama in its relations to the "New Comedy" of Greece and Rome.

GERMANIC LANGUAGES.

Professors GOEBEL and GRIFFIN, Assistant Professor WICKHAM, and Instructor RENDTORFF.

The aim of the elementary classes in this department is to give the student a thorough knowledge of German grammar and to enable him to acquire facility in reading German. The more advanced classes take up the study of the poets and writers of the classical period, and it is intended to offer, by the reading and interpretation of these authors, an equivalent for the study of the ancient languages to those not taking Latin or Greek in their University course. The general responsibility for the work of the first and second years in this department rests with Professor Griffin; that for the work in Literature and Philology with Professor Goebel.

1. Elementary. *3 and 5 hrs., both semesters.* (GRIFFIN, WICKHAM, RENDTORFF.)

German Grammar and German Reader; German Composition; Novelletten; translation of easy prose and poetry.

Course I is intended for those beginning the study of the language.

[In 1895-96 the number of sections in course I will be limited to five: three five-hour sections and two three-hour sections. Students who have had training in Latin, and students who have some knowledge of German, but not sufficient to enable them to pass in entrance subject 19, will be admitted to the three-hour sections.]

2. **Second-Year German.** *3 hrs., both semesters.* (GRIFFIN, WICKHAM, RENDTORFF.)

Wilhelm Tell, Lessing's Prosa, and Goetz von Berlichingen. [In 1895-96, Marie Stuart, Goethe's Prosa, and Minna von Barnhelm.] Advanced grammar and composition, von Jagemann's German Prose composition, translation at sight.

Open to students who have completed course I or its equivalent, or who have received credit for entrance subject 19.

3. **Lessing, Goethe, Heine.** *2 hrs., both semesters.* (GRIFFIN, WICKHAM.)

a. Lessing's Nathan der Weise: Interpretation, with lectures on Lessing as a dramatist and as a social and religious reformer.

[In 1895-96, Schiller's Wallenstein will be read, with lectures on the social and political conditions of that period.]

b. Goethe's Hermann und Dorothea: Translation in connection with the critical essay of A. W. von Schlegel on Hermann und Dorothea.

c. Heine's Prose and Poetry: Translated and studied with especial reference to the social, literary, and political history of his time.

[In 1895-96, Goethe's Iphigenie will be studied, with lectures on the history of the development of the ideal of humanity in the 18th century.]

4. **Scientific German.** *2 hrs., 1st semester.* (GRIFFIN.)

The work in this course consists in the translation of monographs by such leading German scientists as Cohn, Müller, Weismann, and Helmholtz. No student is advised to take this course who has not had at least two years of thorough preparation in literary German.

5. **Historical German.** *2 hrs., 2d semester.* (GRIFFIN.)

This course will consist of the rapid translation of modern historical and economic German. No student is advised to register for course 5 who has not had at least two years of literary German.

6. German Conversation and Rapid Reading. *1 hr., both semesters.* (RENDTORFF.)

[Course 6 will not be given in 1895–96.]

7. Advanced German Composition. *1 hr., both semesters.* (RENDTORFF.)

Buchheim's Prose Composition. Writing of essays in German.

Open to students who have completed courses 1 and 2, or their equivalents.

8. Goethe, Schiller. *2 hrs., both semesters.* (GOEBEL.)

a. Goethe's Faust: Interpretation, with lectures on the development of the Faust legend, the history of Goethe's Faust and its philosophical and ethical ideas.

[In 1895–96, Schiller's Braut von Messina will be studied in connection with the essay, Ueber den Gebrauch des Chors in der Tragoedie.] (First semester.)

b. Schiller's essay, Ueber naive und sentimentalische Dichtung, with lectures on the history of literary criticism in Germany.

[In 1895–96, the Briefwechsel zwischen Goethe und Schiller will be read and interpreted.] (Second semester.)

9. History of German Literature. *2 hrs., both semesters.* (GOEBEL.)

Lectures on the history of German Literature from the earliest times to the Reformation, with parallel readings (Max Müller's German Classics.)

[In 1895–96, lectures on the history of German Literature in the 16th and 17th centuries will be given.] (First semester.)

10. Poetics. *2 hrs., 2d semester.* (GOEBEL.)

Lectures on the psychology and æsthetics of poetry as the basis for literary criticism. Comparative study of the principal theories of lyric, epic, and dramatic poetry from Aristotle to the present time.

This course is open to all students of literature.

GRADUATE COURSES.

The graduate courses in German, for which a thorough knowledge of modern German and the knowledge of Latin at least is required, are intended especially for students who will make the teaching of German their later profession. Careful attention will be given to the linguistic as well as to the literary training of the student, aiming at a comprehensive insight into the historical growth of the Germanic languages and literatures. The scientific methods of original and critical research will be taught and practiced in the seminary. Such students as have given satisfactory proof of their ability as independent investigators will be admitted to the degree of Ph. D., after having presented a thesis containing a contribution to science, and having fulfilled the other requirements prescribed by the University.

The recent purchase by the University of the extensive library of the late Professor Hildebrand of Leipzig offers, on account of the rare completeness of the collection in all branches of Germanic philology and literature, extraordinary opportunities for graduate work in German.

11. **Middle-High German.** *2 hrs., 1st semester.* (GOEBEL.)

a. Middle-High German Grammar, with readings from Weinhold's Lesebuch.

12. **Nibelungenlied.** *2 hrs., 2d semester.* (GOEBEL.)

Interpretation, with lectures on the history of the German hero-legend.

[In 1895–96 the Gudrun will be interpreted.]

13. **Old-High German.** *2 hrs., 1st semester.* (GOEBEL.)

Old-High German Grammar, with readings from Braune's Lesebuch.

14. **Denkmäler Deutscher Poesie und Prosa aus dem VIII–XII Iahrhundert.** *2 hrs., 2d semester.* (GOEBEL.)

Interpretation and lectures. (Müllenhoff-Scherer, 3d edition.)

15. **Old Norse.** *2 hrs., 1st semester.* (GOEBEL.)

Old Norse Grammar, with readings from Brenner's Altnordischem Handbuch.

16. **Edda.** *2 hrs., 2d semester.* (GOEBEL.)

Interpretation of the heroic lays of the older Edda in connection with the course on the Nibelungenlied.

[Courses 15 and 16 will be repeated in 1896–97.]

17. **Gothic.** *2 hrs., 2d semester.* (GOEBEL.)

Gothic grammar and interpretation of select passages from Ulfilas.

18. Comparative German Grammar. *2 hrs., 1st semester.* (GOEBEL.)

Lectures on the comparative grammar of the Germanic dialects.

19. German Seminary. *2 hrs., both semesters.* (GOEBEL.)

In 1894–95 the work of the seminary consisted chiefly of the study of Tacitus' Germania in its relations to Germanic Antiquities and Mythology. On the latter subject a full course of lectures was given by the director of the seminary, and a careful study was made by the members of the principal sources of Germanic Mythology. Papers on Jordanis' De origine actibusque Getarum, Paulus Diaconus' Historia Langobardorum, Gregor v. Tours' Historia Francorum, Widukind's Res gestæ Saxonicæ, and Adam's v. Bremen Gesta Hammaburgensis were presented and discussed. Beside these the following papers were contributed by members of the seminary during the course of the year: The poems of Suchensinn, a poet of the fourteenth century; Studies in the history and sources of Goethe's Faust; Texteriticism of the Urfaust; Critical review on the present state of the Ossian question; Shakspere in the conceptions of dramatic art during the Storm and Stress period.

In 1895–96 a special study will be made of the origin, the æsthetic theories and literary influences of the Romantic school in Germany.

ROMANIC LANGUAGES.

Professor MATZKE, and Assistant Professors BRUN and SYMINGTON.

1. Elementary French. *5 hrs., both semesters.* (BRUN.)

Whitney's Practical French Grammar, with written exercises and systematic training in French pronunciation on the basis of Koschwitz, Les Parlers Parisiens; Fasnacht's French Composition First Course; Whitney's French Reader; Halévy, L'Abbé Constantin; Labiche, Le Voyage de Monsieur Perrichon; Francisque Sarcey; Le siège de Paris.

In this course the study of the language is taken up from the beginning. Stress is laid upon the acquisition, theoretically and practically, of a correct pronunciation, but no direct attempt is made to teach French conversation. The student's entire energy is concentrated upon the attainment of a full and accurate reading knowledge of the language, to which end grammar and composition are made systematically to contribute.

Open to all, but students desiring to enter after the end of the second week, will be admitted only upon special examination.

2. Modern French. *5 hrs., both semesters.* (SYMINGTON.)

Novels: George Sand, La Mare au Diable; Balzac, Eugénie Grandet.

Drama: Racine, Brittanicus; Hugo, Hernani; Augier, Le Gendre de Monsieur Poirier; Pailleron, Le Monde où l' on s'ennuie; Sandeau, Mlle. de la Seiglière.

Contes: Bercy's Contes et Nouvelles Modernes.

Poetry: Bowen's Modern French Lyrics.

History of French Literature: Duval, Histoire de la Littérature Française.

Prose Composition: Whitney's Practical French Grammar, Part II.

A course in reading and introduction to French literature. Systematic attention will be paid to syntax and idiom. One recitation per week (the reading of modern comedies) will be conducted in French, where the texts read will be interpreted in French, and instruction in conversation will be given.

Open to students who have completed course 1, or who have received credit for entrance subject 18.

3. Modern French. *3 hrs., both semesters.* (SYMINGTON.)

George Sand, La Mare au Diable; Balzac, Eugénie Grandet; Racine, Britannicus; Hugo, Hernani; Bercy's Contes et Nouvelles Modernes. Whitney's Practical French Grammar, Part II.

This course is intended for students who wish to acquire a readier reading knowledge of French, but it does not admit to the more advanced courses in the department. Admission to these courses of the third and fourth year will be granted only to students who have completed course 2, or its equivalent.

Open to students who have completed course 1, or who have received credit for entrance subject 18.

4 Classical French. *3 hrs., both semesters.* (MATZKE.)

The class will begin with a study of French tragedy. There will be read Corneille's Cid, Cinna, and Polyeucte, Racine's Athalie, Phèdre and Andromaque, Voltaire's Mérope and Zaïre. When this has been completed, the class will take up Crane, La Société Française au XVII e siècle, and Molière's Précieuses

Ridicules, Le Bourgeois Gentilhomme, Le Tartuffe and L'Avare will be read.

Lectures on French Literature, mainly on the XVII century with parallel readings from Fasnacht, Select Specimens of the Great French Writers.

Open to students who have completed course 2, or its equivalent.

5. **Literary Movements in the 19th Century.** *2 hrs., both semesters.* (SYMINGTON.)

Lectures, supplemented by readings and reports by the members of the class. Students should provide themselves with Pellissier, Le mouvement littéraire au XIX e siècle (Paris, Hachette, 1889), Faguet, Etudes littéraires sur le dix-neuvième siècle (Paris, Lecéne et Oudin, 1889), and Stapfer, Racine et Victor Hugo (Colin et Cie, 1890).

Open to students who have completed course 4.

6. **Advanced Prose Composition.** *1 hr., both semesters.* (MATZKE.)

Meissner, Introduction to French Prose Composition. (Percival & Co., London, 1892.)

Open to all students who have completed course 2 or 3.

7. **Introduction to Old French.** *2 hrs., both semesters.* (MATZKE)

Gaston Paris, Extraits de la Chanson de Roland et de la Vie de Saint Louis. (Paris, Hachette et Cie, 1887); Chrétien de Troyes, Yvain ou le Chevalier au Lyon (Halle, Niemeyer, 1891).

Open to students who have completed course 4.

8. **Spanish.** *3 hrs., both semesters.* (SYMINGTON.)

Manning, Practical Spanish Grammar. Valera, El Pajaro Verde; Larra, Partir á, Tiempo; Valdés, José.

Open to students who have completed French course 1.

9. **Italian.** *3 hrs., both semesters.* (MATZKE.)

Grandgent, Italian Grammar and Italian Composition; Montague, Modern Italian Readings; De Amicis, Camilla and Gli Amici di Collegio; Manzoni, I Promessi Sposi.

Open to students who have completed French course 1.

[Course 8 will not be given in 1895–96.]

GRADUATE COURSES.

Courses of instruction for graduate students in Romanic philology and literature lead to the degrees of Master of Arts and Doctor of Philosophy, and are planned for the benefit of specialists, particularly of such as are looking forward to becoming college teachers of the Romanic languages. Admission to regular standing in this department presupposes an undergraduate curriculum of study which has included Latin and French, and has afforded proficiency in at least one of the principal languages of the Romanic group (French, Spanish, or Italian). In addition to this, a good reading knowledge of German (for purposes of advanced study) is requisite. In connection with their special work, graduate students will be expected to take, under the advice of their professor, such undergraduate courses in the Romanic languages as may supplement their previous studies, and also such graduate courses in related departments as will serve to broaden their general acquaintance with philology and literature.

The course of study is intended to cover a period of three years, and during that time the principal subjects connected with Romanic Philology, such as Old French Dialects, History of Romanic Versification, Popular Latin, Provençal Language and Literature, French, Italian, and Spanish Literature, will be treated. The courses outlined below cover what is considered as the necessary first year's work.

10. **History of Old French Literature.** *2 hrs., both semesters.* (MATZKE.)

Lectures on the History and Development of French Literature from the beginning to the end of the fifteenth century.

11. **Translation of Old French Texts.** *1 hr., both semesters.* (MATZKE.)

Bartsch-Horning, La langue et la littérature françaises (Paris, 1887).

12. **French Historical Grammar.** *2 hrs., both semesters.* (MATZKE.)

Lectures on Old French phonology and morphology. Students should provide themselves with Schwan, Grammatik des Altfranzösischen (2d edition, Reisland, Leipzig, 1893), Suchier, Le Français et le Provençal, traduction de Monet (Bouillon, Paris, 1891), Koerting, Lateinisch-Romanisches Wörterbuch (Schöningh, Paderborn, 1891).

13. **Pro-seminary.** *1 hr., both semesters.* (MATZKE.)

The work will develop in close parallel growth with the lectures on Historical Grammar, and will consist in practical philological exercises based upon Suchier's edition of Aucassin et Nicolete (Paderborn, 1889).

ENGLISH LITERATURE AND LANGUAGE.

Professors **ANDERSON**, **FLÜGEL**, and **HUDSON**, Associate Professors **NEWCOMER** and **LATHROP**, and Instructors **VANCE** and **HARDY**.

The aims of the courses in English are: (1) To give training in the formation and expression of thought; (2) to impart a scientific knowledge of the English Language and Literary History; (3) to acquaint the student with a juster and more liberal method of literary criticism; (4) to introduce him to literature as an art,—to cultivate a refined appreciation of what is best and thus to reveal unfailing sources of pure enjoyment.

Every one of the courses subserves more or less distinctly one or more of these aims; some perhaps subserve them all. In selecting courses the student should observe some system, according as he desires to give greatest prominence to literature, philology, or composition. While no candidate for graduation in English will be permitted to neglect any one of these three phases of English study, every such candidate must do special work in one of the three. No candidate whose course is unsatisfactory to the Department will be recommended for a degree.

A good reading knowledge of the chief modern European languages, especially French and German, is requisite for some of the more advanced courses, and is desirable for all. Students intending to make English their major subject are advised to offer one or more languages. ancient or modern, for entrance, and to continue these subjects in the University. Students entering without such preparation are advised to begin the study of these languages as early in their course as possible. Students making a specialty of English philology will find a knowledge of Latin indispensable.

For graduation in English at least forty hours of work in this department are required, *i. e.*, five hours of work per week for eight semesters. No student will be considered a candidate for the bachelor's degree in English until he shall have passed satisfactorily in courses 8, 22, 23, and either 25 or 26.

After the year 1898 at least three years of Latin (entrance subjects 20 and 21) will be required for graduation in English.

Courses 3 and 4 are open to students who have received credit for entrance subject 1*a*; for all other courses 1*b* will be required. In no case will a student be admitted to an advanced course without permission from the instructor.

In order to enter the University as a Special Student in English the applicant must be at least twenty years of age (see p. 36), and must satisfy entrance requirements 1*a*, 1*b*, and 16, and at least one of the following: 18, 19, 20, 22.

UNDERGRADUATE COURSES.

3. **English Prose Writers of the Nineteenth Century.** *3 hrs., 1st semester.* (NEWCOMER, LATHROP.)

Macaulay, De Quincey, and Carlyle. Lectures, discussions, and reports, written and oral.

[Minto's Manual of English Prose; Macaulay's Essays; De Quincey's Joan of Arc, etc. (ed. Hart); Carlyle's Essays.]

4. **English Prose Writers of the Nineteenth Century.** *3 hrs., 2d semester.* (NEWCOMER, LATHROP.)

Landor, Matthew Arnold, Lowell.

[Landor's Conversations (Camelot Classics), Colvin's Selections from Landor (Golden Treasury Series), Lowell's "My Study Windows," Arnold's "Essays in Criticism" (Second Series.)

7. **Teachers' Course in English Composition.** *2 hrs., both semesters.* (HARDY.)

8. **English Composition.** *2 hrs., 1st semester.* (NEWCOMER, LATHROP, HARDY.)

Three themes a week and an essay every two weeks.

[Scott and Denney's Paragraph-Writing; Bigelow's Handbook of Punctuation, and either the Standard Dictionary or Webster's International Dictionary.]

9. **Forensics.** *2 hrs., 2d semester.* (LATHROP.)

Practice in argument, oral and written, and in the preparation of briefs based upon the masterpieces of argumentative style.

Students must obtain the instructor's permission before registering for the course.

[Baker's Specimens of Argumentation, Baker's Specimen Briefs.]

11. **English Composition.** *2 hrs., 2d semester.* (NEWCOMER, HARDY.)

An advanced course, with special reference to the philosophy of style and its practical application to various forms of literary art.

Students must obtain the instructor's permission before registering for this course.

12. **Homer.** *2 hrs., 1st semester.* (NEWCOMER.)

The Iliad and the Odyssey, studied from translations, as an introduction to English literature, especially to Spenser and Milton.

[Course 12 will not be given in 1895–96.]

13. **Vergil and Dante.** *2 hrs., 2d semester.* (NEWCOMER.)

The Æneid and the Divine Comedy, studied from translations, as an introduction to English literature, especially to Spenser and Milton.

[Course 13 will not be given in 1895–96.]

14. **The English Novel.** *3 hrs., both semesters.* (LATHROP.)

a. The novel in the Eighteenth Century.
b. Scott, Dickens, Thackeray, George Eliot.

15. **History of the English Drama down to Shakspere.** *2 hrs., 1st semester.* (HUDSON.)

[Pollard's English Miracle Plays (Clarendon Press); Peele's Plays and Poems (Morley's Universal Library); Marlowe's Doctor Faustus and Greene's Friar Bacon and Friar Bungay (Clarendon Press); Lyly's Endimion (Holt); Marlowe's Edward II (Holt).]

16. **The Contemporaries of Shakspere.** *2 hrs., 2d semester.* (HUDSON.)

[Thayer's Best Elizabethan Plays; Jonson's Plays and Poems (Morley's Universal Library).]

17. **Spenser.** *3 hrs., both semesters.* (LATHROP.)

A critical examination of his works, with a study of his character, of the esthetic and moral qualities of his poetry, and of his relative position in the history of literature.

Open to students who have done satisfactory work in courses 12 and 13 and in one other English course, or in equivalent courses in other departments.

[Course 17 will not be given in 1895–96.]

18. **The Literature of the Eighteenth Century.** *3 hrs., both semesters.* (HUDSON.)

A comparative study of the literature of the Augustan period, and the early romantic revival.

Open to those only who are familiar with either French or German.

[Ward's English Poets, vol. III; the works of Dryden, Pope, Goldsmith, Cowper, in Macmillan's Globe edition. Editions o other eighteenth century authors, English and continental, in

Cassell's National Library, and other inexpensive reprints, will also be used.]

19. English and American Poetry of the Nineteenth Century. *3 hrs., both semesters.* (HUDSON.)

From Keats to Tennyson and Whitman.

Open to students who have passed satisfactorily in at least three English courses or in equivalent courses in other departments.

[Students must provide themselves with good editions of the works of Keats, D. G. Rossetti, Arnold, Clough, George Eliot, Tennyson, William Watson, Lowell, Emerson, and Whitman. Morris's Earthly Paradise should also be obtained, either complete or in selections.]

20. Thesis. *1 hr., either or both semesters.*

In certain courses, students will be given an additional hour of credit on presentation of a satisfactory thesis embodying the result of independent work. Permission to register for thesis work must be obtained in each case from the major professor.

21. American Literature. *3 hrs., both semesters.* (NEWCOMER.)

A survey of American literary history, and the reading and discussion of notable works in prose and verse. Students in this course are expected to possess the works of the chief American poets, especially Bryant, Poe, Longfellow, Whittier, Emerson, Lowell, Whitman, and Lanier.

22. Anglo-Saxon. *3 hrs., both semesters.* (FLÜGEL, VANCE.)

a. Anglo-Saxon Grammar and Translation of Select Passages in prose and verse (first semester).

b. Introduction to the Study of Anglo-Saxon literature (second semester).

b is a continuation of *a*, but open to all students who have satisfied the instructors of their fitness. For both *a* and *b* some knowledge of either German or Latin is a pre-requisite.

[The text-books used were Sievers's Old English Grammar (Angelsächsische Grammatik, 2d ed., 1886) translated by Cook (second ed., 1887); Bright's Anglo-Saxon Reader; Cook's First Book in Old English.

For course *b*, which covers the period to the Norman Conquest, Ten Brink's Early English Literature, translated by Kennedy, and Stopford Brooke's History of Early English Literature are recommended.

23. Chaucer. *2 hrs., both semesters.* (FLÜGEL.)

This course is an elementary one, and includes an outline of Middle English Grammar for the beginner; it is open to students who have taken course 22 and English History (course 12 or its equivalent.)

[Sweet's Second Middle English Primer, and either a complete edition of Chaucer's Works (Skeat's one volume edition recommended), or Skeat's annotated editions of: (1) The Prologue, etc.; (2) The Man of Lawe's Tale, etc.; (3) The Minor Poems; (4) The Legend of Good Women. Besides these, Pollard's Chaucer Primer and the second volume of Ten Brink's Early English Literature, translated by W. C. Robinson, are recommended.]

24. Wordsworth and his Contemporaries. *3 hrs., both semesters.* (ANDERSON.)

The reading and discussion of some of the more notable poems of Burns, Blake, Chatterton, Cowper, Wordsworth, Coleridge, Southey, Landor, Scott, Byron, Shelley, Keats, and others, with a view first to an acquaintance with this body of literature, secondly to the spiritual, artistic, and political movement which these poets exemplify and interpret.

Open to students who have done satisfactory work in at least three other English courses.

[Ward's English poets, vols. III and IV. The student should also be provided with a good edition of each of the poets mentioned above. Macmillan's new single volume editions of Coleridge, Shelley, Wordsworth, Scott, Burns, and Cowper are recommended.]

[Course 24 alternates with course 25, and will not be given in 1895-96.]

25. Milton. *3 hrs., both semesters.* (ANDERSON.)

A critical examination of the poems and of some of the prose works of John Milton and a study of his life and times, with a view to a realization of his character, a comprehension of his historical importance, and an appreciation of the classical quality of his poetry.

Open to students who have done satisfactory work in courses 12 and 13 and in one other English course, or in equivalent courses in other departments.

[Masson's smaller edition of Milton's Poems (three vols.), either Pattison's or Garnett's, or Stopford Brooke's account of Milton's life and works, Hales's edition of the Areopagitica, and Verity's annotated texts (Cambridge Press).]

26. Shakspere. *3 hrs., both semesters.* (ANDERSON.)

A comprehensive review of most of the plays and poems attributed to William Shakspere, including a study of his life and an attempt to trace the growth of his mind and the development of his art.

Open to students who have done satisfactory work in courses 15 and 16. Those not thus qualified must obtain the instructor's permission before registering.

(The principal text-books are Dowden's Shakspere Primer, Saintsbury's Elizabethan Literature, the Leopold Edition of Shakspere with Dr. Furnivall's Introduction. Every student should also possess at least one volume of Furness's Variorum Edition. Schmidt's "Shakespeare Lexicon" is recommended.]

GRADUATE COURSES.

In connection with the following courses, opportunity will be afforded to graduate students to pursue lines of reading and investigation under the guidance of the professors. The courses offered lead to the Doctor's degree, but the specific requirements for the degree must vary with every individual. In no case will the degree be conferred except upon the completion of a thesis embodying the results of original work of a high order. More definite information will be furnished by the members of the English staff to intending students who write giving the necessary information respecting their purposes and equipment. A very large proportion of the undergraduate courses, especially courses 7, 9, 11, 17, 18, 19, 23, 24, 25, and 26, are adapted to the needs of graduates of other colleges, and are recommended to candidates for advanced degrees.

27. Shakspere: An Introduction to Textual Criticism. *3 hrs.; both semesters.* (ANDERSON.)

Exact reprints of the quarto and folio texts of a few selected plays are collated, textual obscurities and verbal difficulties are carefully discussed, and a complete edition of one play is constructed by each student from the original versions. Following upon the textual study of each play is a discussion of the *dramatis personæ*, an analysis of the author's dramatic methods, and an examination of various elements of his literary power.

Open to students who have completed course 26 or its equivalent, [The necessary books are Vietor's parallel-text reprints of Hamlet and Lear, Daniel's of Romeo and Juliet (New Shakspere Society), and the reduced fac-simile of the first folio edition of the plays. Furness's Variorum, Shakespeare and Schmidt's Shakespere Lexicon are recommended.]

[Course 27 will not be given in 1895-96.]

28. **History of English Lyrical Poetry, from the Earliest Times to the Middle of the Sixteenth Century.** *3 hrs., both semesters.* (FLÜGEL.)

Lectures and interpretations.

[Students will need copies of (1) Grein's Bibliothek der Angelsächsischen Poesie, vol. 1 (ed. Wülker), (2) An Old English Miscellany (ed. R. Morris), (3) Altenglische Dichtungen des MS Harl. 2253 (ed. Böddeker), (4) Percy's Reliques (the editions by Wheatley or by Schröer are especially recommended), (5) Flügel's Neuenglisches Lesebuch, vol. 1.]

[Course 28 alternates with course 29, and will not be given in 1895-96.]

29. **History of Old and Middle English Literature and Historical Grammar of the English Language.** *3 hrs., both semesters.* (FLÜGEL.)

The Period covered is that from the Norman Conquest to the Middle of the Sixteenth Century.

(Books used and recommended are: (1) Whitney's Life and Growth of Language (International Science Series); (2) Sayce's Principles of Comparative Philology; (3) Sievers's Anglo-Saxon Grammar; (4) Ten Brink's Chaucer's Sprache und Verskunst; (5) Ten Brink's Early English Literature, vols. 1 and 2; (6) Morris and Skeat's Specimens of Early English Literature, 2 vols.]

30. **Beowulf.** *2 hrs., both semesters.* (FLÜGEL.)

[The edition used is Harrison and Sharp's.]

31. **History of English Metres.** *2 hrs., 1st semester.* (FLÜGEL.)

From Anglo-Saxon times to the middle of the sixteenth century.

32 **English Palæography.** *2 hrs., 2d semester.* (FLÜGEL.)

Lectures and exercises.

[Books recommended: (1) Skeat's Twelve Fac-similes of Old English MSS., (2) Thompson's Handbook to Greek and Latin Palæography (International Science Series).]

33. English Seminary.

a. King Alfred and his Circle. 4 hrs., both semesters. (FLÜGEL.(Lectures and interpretations.

[Students will need copies of the following works, of which a closer study will be made: (1) Pauli's Alfred the Great (ed. Thorpe, Bohn's Antiquarian Library); (2) Alfred's Version of Boethius (ed. Fox, Bohn's Ant. Lib.); (3) Turk's ed. of the Legal Code of Alfred the Great; (4) Earle and Plummer's Saxon Chronicles; (5) Tho. Miller's ed. of the old English Version of Bede's Ecclesiastical History; (6) Baedae Historia Ecclesiastica (ed. A. Holder, or ed. G. H. Moberly).]

[Course 33*a* will not be given in 1895-96.]

b. English Entymology and Word-History. 2 hrs., 2d semester. FLÜGEL.

Lectures and Investigations.

c Lowell. 3 hrs., both semesters. (ANDERSON.)

In 1895-96 the seminary will enter upon a comprehensive study of the life, works, character, scholarship, and influence of James Russell Lowell. Among the topics to be examined will be Lowell's Puritan background and its influence; his intellectual and literary inheritance; his relations with Maria White, Emerson, Curtis, Agassiz, Holmes, and Longfellow; the significance of his satire; his political course and his career as a public servant; his philological equipment; his competence and usefulness as a critic; the characteristics of his prose style; his letters; the power and quality of his poetry.

Every student pursuing this course should possess a complete set of Lowell's works.

d. Tennyson and Browning. 3 hrs., both semesters. (ANDERSON.)

In 1893-94 a comparative study of Tennyson and Browning was undertaken. Papers treating of Tennyson's indebtedness to a number of preceding poets (Homer, Theocritus, Vergil, Dante, Shakspere, Milton, Spenser, Wordsworth, and others) were prepared and discussed; a detailed examination was made of Browning's *Sordello*; *Paracelsus* and many other of Browning's earlier poems and dramas were read; the dramatic works of the two poets were compared; likewise the *Dramatic Lyrics* and the *English Idylls*; their use of the Dramatic Monologue was examined, and the contrast between them as interpreters of the more positive thought of the age was abundantly illustrated.

[Course 33*d* will be repeated in 1896-97.]

e. Shakspere. *3 hrs., both semesters.* (ANDERSON.)

In 1894-95 some twenty plays of Shakspere were examined with special reference to their sources and relative dates, to the characteristics of Elizabethan dramatic art, and to the development of the author's mind as exhibited in the changes in his style.

PSYCHOLOGY.

Professor ANGELL.

1. **Elementary Psychology.** *2 hrs., both semesters.* (ANGELL.)

Recitations, lectures, and experimental work.

[Students should provide themselves with Wundt's Lectures on Human and Animal Psychology as a reference book.]

2. **Advanced Psychology.** *2 hrs., both semesters.* (ANGELL.)

Feelings and will. Lectures and preparation of abstracts and essays.

[Course 3 in laboratory work is required in connection with this course. Open to those who have completed course 1 or its equivalent.]

3. **Laboratory Work in Psychology.** *2 hrs. (minimum), both semesters.* (ANGELL.)

4. **Methods of Sensation Measurement.** *1 hr., both semesters.* (ANGELL.)

[Course 4 takes up practically the methodology of psychology.]

[Courses 1 and 2 are based mostly on experimental work in Pyschology during the last ten years. Each hour of laboratory work (course 3) usually requires from one to two hours spent in preparing materials and apparatus and in collating results.]

ETHICS.

Professor GRIGGS, and Associate Professor THOBURN.

The aim of this department is the study of concrete human life. The construction of ethical theories is not a primary purpose in the work, and but a small part of the time is devoted to the criticism of theories. The aim is to accomplish in Ethics what is being done in the study of nature by the physical sciences, that is, to study in a scientific spirit, and with inductive methods, the actual, complex world of human life. To this end investigations are made into the facts of belief and conduct in the past and in the present time. Literature and other concrete expressions and studies of human life are regarded as valuable helps in the investigation of ethical questions. The problems of ethical life and thought are given an open and full discussion in various courses of lectures.

1. **Introduction to Ethics.** *2 hrs., 1st semester.* (GRIGGS.)

In this course a general discussion of ethical questions is given. The lectures are tentative rather than dogmatic in character, and are intended to suggest and stimulate thought, rather than to give final conclusions. The present condition of ethical problems is discussed, and an effort is made to show what light has come to ethical investigations from the results and methods of modern science. The subjects considered will include: The Meaning of Ethics, The Methods of Ethical Science, The Basis of the Ethical Life, The Evolution of Moral Ideas, Religion and Ethics, etc.

2. **The Ethics of Personal Life.** *2 hrs., 2d semester.* (GRIGGS.)

A discussion of the more important problems involved in the daily life of the individual. The questions considered will include: The Nature of Personal Life, The Relation of Personal Ideals to Social Movements, The Eternity of Individual Life, Self-Culture, The Ethics of the Personal Relations, the Laws of Individual Life.

3. **The Ethical Study of Literature.** *2 hrs., both semesters.* (GRIGGS.)

Lectures upon the study of literature as an expression of the higher human life. During the first semester a discussion will be given of Dante's Divine Comedy, and in the second, of Goethe's Faust.

4. **An Ethical Study of Autobiography.** *3 hrs., 1st semester.* (GRIGGS, E. BARNES.)

This course is a study of the problems of personal life. Revelations of personal experience in different historical epochs will be studied; and the problems which, in different forms, are constantly recurring will chiefly be considered. As these questions have the largest possible bearing on Education, the course will be conducted conjointly by the two departments. The texts will include: The Confessions of St. Augustine, The Autobiography of Benvenuto Cellini, The Confessions of Rousseau, The Autobiography of Goethe, The Journal of Amiel, The Confessions of Tolstoi, etc.

5. **Modern English Ethical Philosophy.** *3 hrs., 2d semester.* (GRIGGS.)

A comparative study of the most important modern English theories of Ethics, including the treatises of Spencer, Sidgwick, Stephen, Martineau, Green, and others.

Open only to advanced students.

6. **Seminary for the Study of Ethical Theories.** *2 hrs., 1st semester.* (GRIGGS.)

Each year some one philosopher is selected and his works critically studied, to determine his ethical theory in relation to other theories of conduct, to find the sources of his theory and its relation to the life of the author's time, and to find its relation to ideals and conduct to-day. The subject for 1895-96 will be Plato.

Open only to advanced students.

7. **Seminary in the History of Morals.** *2 hrs., 2d semester.* (GRIGGS.)

Devoted to special researches in the evolution of ethical conduct and ethical ideals. For 1895-96 the studies will be in the history of European morals.

Open only to advanced students.

8. **Life and Teachings of Christ.** *2 hrs., both semesters.* (THOBURN.)

A study of the New Testament, with lectures upon the historical development of Christianity and the relation of Christian Ideals to the life of the present time.

9. **Comparative Religion.** *3 hrs., both semesters.* (THOBURN.)

Studies in the comparative history of religions with special reference to development. An effort is made to trace some of the laws that govern the growth of religion and the influences and factors that affect its development. The course consists of lectures, critical discussions, and written exercises.

10. **Organic Evolution.** *3 hrs., both semesters.* (JORDAN, THOBURN.)

Lectures on the origin of species, the laws of life, and the factors of organic evolution, including the evolution of social and religious institutions.

Course 9 will count three hours per semester to those who prepare a satisfactory thesis on some one of the subjects discussed. Students not electing the thesis work will receive two hours credit.

EDUCATION.

Professor EARL BARNES, and Instructor SCHALLENBERGER.

1. **History of Civilization in Europe.** *2 hrs., both semesters.* (E. BARNES.)

Deals with the historical development of man's political, religious, industrial, social, and moral ideals and his attempts to realize them through education. The work will consist of studies on such records as are available in the library, and on leaflets prepared for the course, with lectures.

2. **The Intellectual Development of America.** *2 hrs., both semesters.* (E. BARNES.)

This course will deal with the successive steps in our intellectual development as shown in our schools, literature, journals, and social and theological movements. The work will be presented in special studies and lectures, and will be given with special reference to the development of educational ideas.

3. **The Psychology of Childhood.** *2 hrs., both semesters.* (E. BARNES, SCHALLENBERGER)

This course will deal with the physical, intellectual, and moral development of children. The work will consist of original studies on the children in the school connected with the department, or on children otherwise available, of statistical studies on data concerning the development of the senses, emotions, etc., collected from various schools, and of studies in the literature of the subject. After 1895–96 students wishing to take up this course must have had an elementary course in psychology.

4. **Methods of Teaching Subjects in Elementary Schools.** *2 hrs., 1st semester.* (SCHALLENBERGER.)

This course will deal with common school subjects, their efficacy, their relative importance, their co-ordination.

5. **Methods of Teaching Subjects in Secondary Schools.** *2 hrs., 2d semester.* (SCHALLENBERGER.)

In this course a series of lectures and lessons will be given by various members of the faculty outlining the place of their various subjects in a course of liberal study, and dealing with text-books, class-room management, and general questions of method. It is believed that men who have made a special study of their departments can present work which will be of assistance to those intending to teach.

6. **School Organization and Supervision.** *2 hrs., 2d semester.* (SCHALLENBERGER.)

A comparative study of the organization and management of schools with a view to determining the influences, political, social, and pedagogical, that affect the formation, growth, and vitality of schools.

7. **Study of Educational Classics.** *2 hrs., both semesters.* (SCHALLENBERGER.)

For 1895-96 this course will consist of a critical and historical study of the works on education by Ascham, Bacon, Milton, Locke, Spencer, and such other classics as it may seem best to add.

8. **Comparative Study of European School Systems.** *1 hr., 2d semester.* (E. BARNES.)

This course will consist of lectures and comparative studies on the school systems of England, France, Germany, and Switzerland.

9. **Rousseau and Pestalozzi.** *2 hrs., both semesters.* (E. BARNES.)

An historical and critical study of Rousseau's *Emile* and Pestalozzi's *Lienhard und Gertrud*, or of such other classics as may be substituted.

This course is intended for those who wish to study these works, and at the same time to strengthen their use of French and German.

10. **Seminary.** *2 hrs., both semesters.* (E. BARNES.)

Devoted to particular studies in education. Intended for advanced students, or for teachers of considerable experience.

[11. **School Hygiene, Anthropometry, and Physical Training.** See course 4 in Department of Hygiene and Organic Training.]

[12. **Teacher's Course in General Physiology.** See course 9 in Department of Physiology.]

[13. **An Ethical Study of Autobiography.** See course 4 in Department of Ethics.]

[14. **Teacher's Course in Latin.** See course 12 in Latin.]

[15. **Teacher's Course in English.** See course 7 in English.]

Under the present ruling of the State Board of Education graduates of this University who are recommended by the Faculty and who have had at least six hours work in the Department of Education for one year, may receive certificates to teach in California without examinations. Students intending to prepare themselves for such certificates are expected to take courses 1 or 2, 3, 4, and 5, unless they have already done work equivalent to these courses.

Major students in the department are expected to have a reading knowledge of French and German before graduating. Special work will be arranged for graduate students. Teachers not candidates for a degree, but wishing to carry on special studies in the department, will be given every assistance which the department can offer.

HISTORY.

Professor HOWARD, Associate Professor SHOW, and Assistant Professors M. S. BARNES, SPENCER, and KRIEHN.

1. **History of Rome.** *3 hrs., both semesters.* (SHOW.)

From the earliest times to the fall of the Western Empire, with special reference to institutions.

Course 1 is open to all students, and is required of first year students in History. It is designed to afford a general training in scientific method. The systematic use of books is had constantly in view. In class the work consists of informal lectures, critical discussions, and written reviews. During the year, in addition, every student is expected to present before the class oral or written reports on subjects assigned for special reading.

2. **Mediæval Institutions.** *2 hrs., both semesters.* (SHOW.)

Course 2 is open to second year students, and is designed to continue the work done in course 1. Beginning with the later imperial organization, it will trace the main development of European institutions from the fifth to the fifteenth century, with special reference to the Germanic polity, feudalism, and the rise of the great modern states. Themes and analyses will be expected from time to time. Some attempt will be made, also, to acquaint the students with proper methods of handling the original sources of the mediæval period.

3. **History of the Pacific Slope.** *3 hrs., 1st semester.* (M. S. BARNES.)

This is a general course, open to all, on the approval of the professor in charge, and giving a general view of the development of the Pacific Slope, during the Spanish, Mexican, and American periods. The leading topics are as follows: Native races and resources; the Spanish opening of the South; the English and Russian opening of the North; the American conquest; the social, political, and intellectual life of the American period. The weight of attention throughout will be given to the culture-history of the Slope.

4. **History of the Main Political and Intellectual Movements of the Nineteenth Century.** *3 hrs., 2d semester.* (M. S. BARNES.)

This is a general course, open to all, on approval of the professor in charge. The course deals with the history of France, Italy, and Germany since 1789, the Eastern Question, and the extension of Europe. It is introduced by a survey of the questions of to-day.

5. **Church and State in the Middle Ages.** *2 hrs., both semesters.* (SHOW.)

Course 5 is open to graduates and undergraduates who have taken course 2 or its equivalent. It will consider the relations of the early church to the pagan and Christian empires, the rise of the papacy, the foundation of the temporal power, the theory of the Holy Roman Empire, the conflicts of the church and the civil power, and similar topics. After the ninth century, special stress will be laid on the relations of the papacy to the German empire. Students will be guided in research work on selected topics.

6. **History of the Renaissance.** *2 hrs., both semesters.* (SHOW.)

Open on the same conditions as course 5. After tracing briefly the earlier intellectual movements of the period, such as the literary revival under Charles the Great, the rise of scholasticism, the growth of the mediæval universities, the course will be devoted to a detailed study of the revival of learning, and the development of the new humanism in its relations to the intellectual, political, social, and religious life of the later middle ages. Incidental attention will be given to the characteristic art and literature of the period.

[Course 6 will not be given in 1895-96.]

7. **American Political and Institutional History to 1775.** *2 hrs., both semesters.* (SPENCER.)

Course 7 is open to third year students, and to graduates. Without excluding other topics, it is devoted mainly to the constitutional history of the English colonies. The origin and development of the various types of local organization receive special attention. An attempt is made, in this period, to trace the beginnings of our present State and National Constitutions.

8. **Constitutional and Political History of the United States since 1775.** *3 hrs., both semesters.* (HOWARD.)

Course 8 is open to graduates and to undergraduates who have had courses 1 and 2, or their equivalent. It should, when practicable, be preceded by course 7. It is a study of the Revolution, the Critical Period, and the formation and development of the National Constitution. This course is important for the study of law.

9. **History of the English Constitution to 1485.** *2 hrs., both semesters.* (HOWARD.)

Course 9 is open to graduates and advanced undergraduates. It is designed to afford a detailed study of the origin and development of English institutions, local and national, to the end of the Middle Ages. This course is especially important as a preparation for the study of law.

[Course 9 will not be given in 1895-96.]

10. **History of the English Constitution since Henry VII.** *2 hrs., both semesters.* (HOWARD.)

Course 10 alternates with course 9, and is open to graduates and to advanced undergraduates. It is designed to afford a detailed study of the growth of the English Parliament and the Cabinet system. Particular attention is given to the constitutional results of the Puritan Revolution and to the existing forms of local government and administration. This course is also important as a preparation for the study of law.

11. **The French Revolution.** *2 hrs., both semesters.* (HOWARD.)

With special reference to its causes and its constitutional experiments. Open to students having a fair knowledge of general European history.

12. **History of England to 1485.** *2 hrs., both semesters.* (KRIEHN.)

Course 12 is a general course, open to all students, and may be taken by first year students, instead of course 1. It is intended to give training in historical methods, and as a preparation for advanced work in English constitutional and economic history, law, and English literature. The plan of the course comprises detailed treatment of the original sources, in addition to the social, political, and constitutional development. Instruction will consist in lectures by the instructor; in discussions, oral and written reports, by the students.

13. History of England since 1485. *2 hrs., both semesters.* (SPENCER.)

The aim, like that of course 12, is to trace political and social development. The internal history of the country is traced, but the chief point of view in the last two centuries is the industrial and colonial expansion, and thus the subject is studied in its European and American relations.

Course 13 is open to all students, and may be taken by first year students instead of course 1; it is specially recommended to those desiring a general course.

14. History of the Protestant Reformation. *3 hrs., both semesters.* (SPENCER.)

This course begins with a study of the fundamental principles of the Reformation, especially as seen in Luther, Zwingli, and Calvin. The origin, principles, and growth of the various sects within Protestantism are traced. Special attention is paid to the Counter-Reformation, including the Council of Trent, the Jesuits, the Inquisition, and the Index. The economic and intellectual relations of the Protestant movement and the political and religious struggles growing out of it are traced to the close of the Thirty Years' War.

16. Special Studies in Local and Contemporary History. *1 hr., both semesters.* (M. S. BARNES.)

The work of this course is open to students who have had courses 3 and 4, or who seem otherwise specially qualified. Studies will be made in such special topics as the Paris Commune, Germany in the Napoleonic era, the expansion of Europe, the territorial development of the Pacific Slope, the Chinese Empire, the Japanese development. Topics will be selected according to the wishes of the class formed. The whole class will study the same topic at the same time.

17. Comparative Constitutional Law. *2 hrs., both semesters.* (SPENCER.)

This begins with a study of the growth of constitutionalism, of representative democracy, and of federalism in the last century tracing the tendencies of political development in both central and local government. The main work of the course is the comparative study of constitutions, developing the principles applied in the organization, powers, and relations of the legislature, the executive, and the judiciary.

18. Development of Political Theories in the Seventeenth and Eighteenth Centuries. *2 hrs., both semesters.* (SPENCER.)

After a consideration of the differences between the mediæval and the modern state and of the point of view of mediæval writers on politics, a survey will be made of the transition ideas of the sixteenth century and of the revival of the conception of the Law of Nature. The course will consist mainly of the study of English and French political writers, especially Hooker, Hobbes, Harrington, Locke, Bossuet, Montesquieu, Rousseau, and Bentham. The point of view will be the conflict between conservative or absolutist and liberal or democratic tendencies, and the different uses made of the notions of natural law and of social compact as foundations for opposing views will be investigated. The attempt will be made carefully to trace the connection of theories with practical politics, whether as cause or as result.

[Course 18 will not be given in 1895–96.]

19. Department Seminary. *2 hrs., both semesters.* (HOWARD, SHOW, M. S. BARNES, SPENCER, KRIEHN.)

The Seminary is designed primarily to afford a practical training in methods of historical research through the use of original materials; and it combines the advantages of a University Historical Society. The distinctive work of graduates falls mainly under direction of the Seminary. It may be elected by fourth year students in History and by others who are deemed qualified. All the instructors in the Department will attend as members and leaders. The work at the weekly sessions will consist of the presentation and discussion of papers, reports, book reviews, and similar results of independent research. A record of proceedings will be made by the Seminary Secretary.

Members of the Seminary are not expected to register for course 20.

20. Thesis or Research Work. *1 or 2 hrs., each semester.*

In all courses in History, unless otherwise specified, students will be given an additional hour of credit, on presentation of a satisfactory thesis embodying the results of independent work. Permission to register for thesis work must be obtained in each case from the major professor. As a rule, every student taking History as a major subject is required to register for thesis work; but no one should register until after consultation with the instructors in the courses which he proposes to take. In special cases permission will be given to register for two hours. When a student is taking two or more courses in History the same semester, he may select his thesis in connection with either of them. Topics for independent investigation are suggested in connection with the various courses in the Historical Department. Registration for thesis work is not intended to exempt students from such incidental reports or discussions as may be required in connection with any course.

21. **Social and Economic History of England.** *3 hrs., both semesters.* (KRIEHN.)

From the earliest times to the nineteenth century.

The term "social" is here used in its broadest sense to include the history of science, education, art, culture, and religion. The main weight of the course, however, will be placed on economic evolution, especially on the development of agriculture, industry, and commerce. The condition of the masses is held constantly in view, detailed treatment being given of the attempted social revolts of the 14th, 15th, and 16th centuries. Instruction will include original research on the part of the student.

22. **Ancient and Roman Law.** *2 hrs., both semesters.* (HOWARD.)

Course 21 is a study of the genesis and development of juridical ideas, together with a consideration of the elements of the Roman law. Open to advanced students in Law and other departments.

[Course 22 will not be given in 1895-96.]

ECONOMICS AND SOCIAL SCIENCE.

Professors WARNER and ROSS, Assistant Professors MARY ROBERTS SMITH and WILLOUGHBY, and Instructor JENNESS.

ECONOMICS.

1. **Elements of Economics.** *3 hrs., 1st semester.* (WARNER, JENNESS.)

A text is systematically studied and much collateral reading assigned. The class when large is divided into sections for recitation and discussion. The text will be supplemented by lectures. Students who take their major in this department should begin with course 1, preferably in their second year.

2. Economic Problems. *3 hrs., 2d semester.* (ROSS, JENNESS.)
Lectures and reports. A study of the signs and causes of existing discontent; of the nature, benefits, and evils of the industrial revolution; and of the complaints of the farmer, the workingman, and the consumer. The various reforms demanded on their behalf, including land nationalization, state socialism, and collectivism, will be examined and discussed.

Courses 1 and 2 are complementary and form the best introduction to the work of the department.

3. Corporate Industry. *3 hrs., 1st semester.* (WARNER.)
Lectures. A comparative and historical review of corporation law in its economic aspects. The work is preparatory to courses 4 and 6.

[Course 3 will not be given in 1895–96.]

4. The Administration of Great Companies. *3 hrs., 2d semester.* (WARNER.)
Supplementary to course 3, which is a prerequisite for taking it. Lectures on the internal organization and management of great railroad, banking, insurance, and other companies, with an inquiry regarding the means at the disposal of the stockholders or other owners for making their will effective in the various branches of administrative practice.

5. Transportation. *3 hrs., 1st semester.* (ROSS.)
A review of the economic, social, and political consequences of improvements in transportation and a study of the problems of the wagon road, the canal, the natural waterway, the street railroad, and the postal and telegraph services.

[Course 5 will not be given in 1895–96.]

6. Railroad Problems. *3 hrs., 2d semester.* (WARNER.)
Lectures and assigned reading. This course is supplementary to either courses 3 or 5, but may be taken by those who have had neither. Extensive use will be made of the Hopkins Library of Railroad Literature.

7. Public Finance. *3 hrs., 1st semester.* (ROSS.)
Lectures and recitations with Bastable as text. Much attention will be given to the revenues, expenditures, and financial experiences of American states and cities.

8. Money and Credit. *3 hrs., 1st semester.* (ROSS.)
Lectures and assigned reading. Special study of paper money,

bank issues, bimetallism, the silver question, credit agencies, monetary crises, and banking.

[Course 8 alternates with course 7, and will not be given in 1895–96.]

9. Advanced Economics. *2 hrs., both semesters.* (ROSS.)

Marshall as a basis. Study of concrete phenomena with a view to ascertaining the secondary laws that amend or qualify the fundamental propositions of economics.

[Course 9 will not be given in 1895–96.]

SOCIAL SCIENCE.

10. Sociology of the Family. *2 hrs., 1st semester.* (M. R. SMITH.)

11. Principles of Household Management. *2 hrs., 2d semester.* (M. R. SMITH.)

Lectures and assigned reading. A study of household finance, sanitation, dieraries, domestic labor, and kindred topics.

12. Social Pathology. *2 hrs., 1st semester.* (WARNER.)

Lectures and assigned reading. A study of abnormal conditions and the social causes and effects of vice, crime, and pauperism.

13. Charities and Corrections. *2 hrs., 2d semester.* (WARNER.)

Supplementary to course 12, being a study of social therapeutics. So far as practicable visits will be made by the class to the charitable and penal institutions of the State. Contributions to a forthcoming report on the Charities of California are made by members of this class from year to year.

14. Sociology. *2 hrs., both semesters.* (ROSS.)

Lectures with Small and Vincent, and Ward as texts. Two papers will be required from each student. Study of the growth and meaning of institutions. Analysis of contemporary society. Examination of the social forces and their direction. Theory of social progress.

15. Cities. *2 hrs., 1st semester.* (ROSS.)

Round-table work. Examination of the nature and development of a city, and of the industrial, political, and social phenomena peculiar to it. A special study in sociology, economics, and politics. For advanced students. Registration by permission only.

POLITICS.

16. The Theory of the State. *3 hrs., 2d semester.* (WILLOUGHBY.)

A consideration of the nature and origin of the State, its forms, its aims, its organization and operation, its legal character, its right to be, the scope of its powers, its relation to the People, and to other States; concluding with a special treatment of the modern constitutional State, its characteristics and present tendencies.

[Course 16 will not be given in 1895–96.]

17. Legislation. *2 hrs., 2d semester.* (WILLOUGHBY.)

A comparative view of the composition, rules, and practice of modern legislative bodies, especial attention being given to the comparative merits of "Parliamentary" and "Congressional" methods.

[Course 17 will not be given in 1895–96.]

18. Practical Politics. *2 hrs., 1st semester.* (WARNER.)

Given only during the autumns when Congressmen are elected. Lectures on party organization and management. The politics of the local political units will be especially considered, and the present day duties of the citizen studied. Bryce and Roosevelt will be read. Each member of the class will be expected to subscribe for at least one daily paper taking an active part in the campaign.

[Announced for 1896–97.]

GENERAL.

19. Department Seminary. *2 hrs., both semesters.* (WARNER, ROSS, M. R. SMITH.)

The instructors in the department will meet advanced students doing original work once a week during a session of two hours. Reports of special investigations will be made by students and others, and discussed by the seminary.

20. Thesis.

In certain courses students will be given an additional hour of credit on presentation of a satisfactory thesis embodying the results of independent work. Permission to register for thesis work must be obtained in each case from the major professor. Every student having his major in this department will be expected to register for course 19 or course 20 during his third and fourth years.

LAW.

Professor ABBOTT, and ————.

The Department of Law conforms in all respects to the other departments of the University. The requirements for admission are the same; the courses are open for election as major or minor subjects the same as in other departments; the same degree is granted to those who have taken Law as a major subject; in short the work is that of a regular University Department and not that of a professional school, although the full course is intended to include the subjects studied in the best professional schools.

The ultimate aims of the department, when fully developed, will be (1) To furnish such instruction in the elementary principles of Anglo-American law as may properly form a part of the education of an American citizen; (2) To furnish such instruction in commercial law as may be adapted to the needs of those who intend to become merchants, bankers, brokers, etc., or to follow other lines of business; (3) To provide for students intending to enter the public service adequate instruction in public and international law; (4) To furnish to students of political and social science training in special branches of law related to such subjects; (5) To provide for the study of jurisprudence as a science and therewith of legal history and legal institutions; (6) To furnish to students intending to adopt law as a profession a complete and thorough course of instruction which shall fit them for practice in any of the American States or wherever the common law of England prevails.

The work, therefore, when fully developed, will include a wide range of studies: instruction will be offered in the English substantive law, including the law of persons and of personal rights, with the special limitations growing out of infancy, coverture, incorporation, etc.; in the law of property and of property rights, the law of commerce and of commercial and business relations, and the special jurisdiction of the courts of equity and admiralty; in the law of procedure and evidence in all the courts; in constitutional and international law; in legal history and institutions; in legal bibliography and legal material; in the civil law, and in general and comparative jurisprudence.

In addition to the courses which will form the undergraduate work of those electing Law as a major subject, it is expected to provide fifth-year or graduate courses especially adapted to the needs of those who intend to enter upon the practice of law as a profession, thereby enabling a student to complete in five years a thorough course in law in the same way in which he is now enabled to complete a course in any other specialty. Such courses when announced will be strictly graduate courses, and will be open only to graduates of this University or other similar institutions.

Students in Law are expected to take the courses in the order given. Courses 1, 2, 3, and 4 will occupy the first year, and are to be supplemented by courses in other departments, to be selected under the advice of the professors in Law. Courses 5, 6, 7, 8, and 9 will occupy the second year in Law, and will be supplemented by courses in other departments, to be selected under the advice of the professors in Law. Otherwise any of the courses in Law are open to all students.

1. **Elementary Law.** *5 hrs., 1st semester.* (———)
This course deals with the structural elements of Anglo-American law and is intended to familiarize the student with its fundamental conceptions, principles, classifications, and relations.

2. **Contracts.** *3 hrs., 2d semester.* (———)
This course includes: (*a*) a study of the elementary principles and conceptions of the law of contracts; (*b*) a study of a considerable number of leading and typical cases from which the student will deduce statements of principles; (*c*) incidentally, instruction and practice in methods of dealing with legal material.

3. **Quasi-Contracts.** *2 hrs., 2d semester.* (———)
This course deals with the rights and obligations which arise independently of contract or tort, but which are of the nature of one or the other, as, for example, the right to recover money paid under duress. This course also deals with the subject of selection of remedies as between actions of contract and actions of tort.

4. **Torts.** *2 hrs., 2d semester.* (———)
This course deals with the non-contract private law, that is, with the fundamental legal rights, other than those growing out of contract, the various wrongs by which such rights are invaded, together with the methods and limits of redress. Leading and typical cases will be studied in the same way and for the same purpose as in course 2.

5. **Persons and Domestic Relations.** *3 hrs., 1st semester.* (———)
This course includes a study of the legal relations of the family,

of marriage and divorce, husband and wife, parent and child, guardian and ward, and such aspects of master and servant as are not treated under agency.

6. Criminal Law. *3 hrs., 1st semester.* (ABBOTT.)
This course deals with the law of crimes. It will include a study of the history of the criminal law, as well as of specific crimes. Considerable attention will be given to the law of strikes, conspiracies, and the criminal aspect of illegal combinations affecting labor.

7. History of Actions and the Writ Process. *1 hr., 1st semester.* (ABBOTT.)
This course is intended as an introduction to the study of pleadings, and of the development of the Common Law and Equity procedure.

8. Personal Property. *4 hrs., 2d semester.* (——)
a. A comprehensive course on the law of personal property, with a study of the fundamental principles of possession and ownership (1 hr.). *b.* A study of the law of Sales and Gifts *inter vivos* (3 hrs.).

9. Agency. *3 hrs., 2d semester.* (——)
This course will include a study of the law of Principal and Agent, Brokers, Factors, Attorneys in Law and in Fact.

10. Seminary in Politico-Legal Questions. *1 hr., 2d semester.*
The work in this course will consist in an investigation of some special constitutional, international, and legal questions that have an important bearing on political, social, or economic problems. The course is intended to be auxiliary to the courses in History and Political Science.

11. Commercial Law. *2 hrs., 1st semester.* (——)
This course will include the main topics of the law merchant and special topics of importance in ordinary business transactions.

12. Bailments, Carriers, Railway Law, and Interstate Commerce.

13. Real Property. *3 hrs., both semesters.* (ABBOTT.)
a. Tenures, Estates, and Easements will be considered in this part of the course on real property, which is intended to be comprehensive. The land tenures of California and the influence of Mexican land law will receive full treatment, probably by special lecturers. (First semester.)

b. Title, both *inter vivos* and by descent, and devise will be considered. With this the law of administration will be taken up, and title to personal as well as real property will be included. (Second semester.)

14. **Partnership.**

15. **Equity Jurisprudence.**

16. **Important English Statutes.**

This course will deal with the passage of specific English statutes,—the occasion of their passage, and their effect on the Common Law. Also the modification and interpretation of these statutes by judicial decisions, and incidentally the relation of legislation and legal fictions and judicial decisions to the growth and change of the law will be considered.

17. **Anglo-Saxon Laws.** *1 hr., both semesters.* (FLÜGEL.)

In this course the whole body of Anglo-Saxon law will be read and interpreted. [The text used will be Schmid, Die Gesetze der Angelsachsen, 2d ed.]

As the laws will be read in Anglo-Saxon, a short grammatical outline of the language will be given. Some knowledge of Latin and German will be very desirable.

MATHEMATICS.

Professors ALLARDICE, LITTLE, and GREEN, Assistant Professor ALEY, Instructor COX, Assistants ARNOLD and WINSHIP.

The courses in this department have been arranged to meet the wants of three classes of students—students in the departments of Engineering and Physics, students whose major subject is Mathematics, and students who, while taking their major in some other department, desire to include some Mathematics in their course. Courses 1, 2, 3, and 4 have been arranged for students in Engineering, after consultation with the professors in these departments; courses 1 and 2 forming the work for the first year and courses 3 and 4 for the second year.

For students whose major subject is Mathematics the following programme of work is recommended: In the first year, courses 5 and 6; in the second year, courses 7 and 8; in the third year, course 9, along with Dynamics (see Department of Physics, or some other course; while the work during the fourth year and

for graduate students may be selected from the remaining courses. The advanced courses in the more modern branches of Mathematics will, for the most part, be given once in two or once in three years, and it is hoped that the advanced students will thus have the opportunity of studying the more important branches of modern Mathematics.

Students who desire to take one or more years of Mathematics as part of a liberal training are recommended to begin their work in this department with courses 5 and 6, or with one of them.

1. **Solid Geometry and Algebra.** *3 hrs., both semesters.* (ALEY, COX.)

(Three sections.) In this course a few weeks will be devoted to a discussion of some of the more important parts of Plane Geometry.

2. **Trigonometry and Co-ordinate Geometry.** *4 hrs., both semesters.* (GREEN, ALEY.)

(Three sections.) Courses 1 and 2 constitute the first year's work for students in Engineering.

3. **Calculus.** *5 hrs., both semesters.* (COX.)

(Two sections.)

4. **Analytical Mechanics.** *3 hrs., both semesters.* (LITTLE.)

(Two sections.) Courses 3 and 4 constitute the second year's work for students in Engineering.

5. **Geometry.** *2 hrs., both semesters.* (ALLARDICE.)

This course will include a discussion of some of the more modern developments of synthetic geometry.

Open to students who have credit for Plane Geometry as an entrance subject.

6. **Algebra.** *3 hrs., both semesters.* (GREEN.)

In this course the methods of Chrystal's Algebra will be followed; but the subject will be presented in as elementary a form as possible.

Open to students who have credit in Elementary Algebra as an entrance subject.

Courses 5 and 6 may be taken as the first year's work by students making Mathematics their major subject. These courses are also recommended to students whose major subject lies in some other department, but who may desire to include some Mathematics in their course.

7. **Advanced Algebra and Trigonometry.** *3 hrs., both semesters.* (ALLARDICE, GREEN.)

8. **Co-ordinate Geometry.** *2 hrs., both semesters.* (LITTLE.)

Charles Smith's *Conic Sections* will be used as a text-book.

Courses 7 and 8 form the regular work, during the second year, for students whose major subject is Mathematics.

9. **Differential and Integral Calculus.** *3 hrs., both semesters.* (ALLARDICE.)

Lectures on the differential and integral calculus, with applications to the theory of plane curves, on the lines of Williamson's treatises.

Students are recommended to take this course in their third year.

10. **Differential Equations.** *3 hrs., both semesters.* (LITTLE.)

Forsyth's *Differential Equations* will be used as a text-book.

11. **Analytical Geometry of Plane Curves.** *2 hrs., both semesters.* (GREEN.)

12. **Analysis.** *2 hrs., both semesters.* (GREEN.)

Portions of Jordan's *Cours d' Analyse* will be used in the class.

13. **Geometry of Three Dimensions.** *3 hrs., both semesters.* (ALLARDICE.)

Salmon's *Geometry of Three Dimensions* is used in course 13.

14. **Theory of Invariants.** *2 hrs., both semesters.* (ALLARDICE.)

Salmon's *Higher Algebra* is used in course 14.

[15. **Dynamics.** See course 6 in Department of Physics.]

16. **Co-ordinate Geometry.** *2 hrs., both semesters.*

An advanced course in this subject, in which Salmon's *Conic Sections* is used as a text-book.

17. **Quaternions.** *3 hrs., both semesters.*

Tait's *Quaternions* is used as a text book.

18. **Higher Plane Curves.** *2 hrs., both semesters.*

Salmon's *Higher Plane Curves* is used as a text-book.

19. **Function-Theory.** *2 hrs., both semesters.*

Durège's *Theorie der Analytischen Functionen* and *Theorie der Elliptischen Functionen* are used as text-books.

20. **Algebra.**

The second volume of Chrystal's *Algebra* is used as a text-book.

[Courses 16 to 20 inclusive will not be given in 1895–96.]

ASTRONOMY.

Professor HUSSEY.

1. **General Astronomy.** *3 hrs., both semesters.* (HUSSEY.)
Open to all students. Introductory course, intended to furnish a general knowledge of the fundamental facts and theories of Astronomy. It is suited to general students, and to those who have not taken courses in Mathematics in the University. The work will be arranged so that students may begin the course the second semester; it is better, however, to begin the first semester.

2. **Spherical Astronomy.** *2 hrs., 1st semester.* (HUSSEY.)
This course includes the elements of Spherical Astronomy and the Theory of Instruments, also the methods of determining time, latitude, longitude, and azimuth. General Spherical Trigonometry will be included in the course. A knowledge of Analytical Geometry is assumed.

3. **Method of Least Squares.** *2 hrs., 1st semester.* (HUSSEY.)
This course includes the theory of probability and its application to the combination and comparison of observations. Empirical curves will also be considered. A knowledge of Integral Calculus is assumed.

4. **Eclipses and Occultations.** *2 hrs., 2d semester.* (HUSSEY.)
This course includes the mathematical theory of solar and lunar eclipses and of occultations. Theory will be enforced by practical examples. A knowledge of Calculus and Spherical Astronomy is assumed.

5. **Double Stars.** *2 hrs., 2d semester.* (HUSSEY.)
The theory and practice of the determination of the orbits of double stars by graphical and analytical methods. A knowledge of Calculus is assumed.

6. **Theoretical Astronomy.** *3 hrs., either semester.* (HUSSEY.)
This course treats of the motions of bodies composing the Solar System and includes the Dynamics of a system of Bodies, the Computation of Ephemerides, the determination and correction of the elements of the Orbits of Comets and Planets, and the Theory of Special and General Perturbations. To include all these subjects the course must be taken through several semesters. A knowledge of Integral Calculus is assumed.

GRADUATE COURSES.

Besides the courses above that are suitable for graduate work, others will be arranged after consultation. These will generally be theses requiring original research. For the present they will be mathematical in character, and will presuppose a knowledge of Calculus, Differential Equations, and Analytical Mechanics. A reading knowledge of French and German is also almost indispensable.

7. **Graduate Courses at the Lick Observatory.**

With the approval of President Kellogg, Professor Holden, Director of the Lick Observatory, announces that "The Lick Observatory of the University of California extends to the Leland Stanford Junior University the courtesy of receiving its graduates seeking one of the higher degrees, as A. M. or Ph. D., and also a limited number of special students." The courses in this University lead directly to the courses given at the Lick Observatory, and residence at the Observatory will count as residence at the University. For further information concerning these courses, students should apply to Professor Hussey.

PHYSICS.

Professors SANFORD and CARMAN, Assistant Professor TAYLOR, Instructor STEARNS, and Assistant GILMORE.

1. **Elementary Laboratory Physics.** *2 hrs., both semesters.*
(STEARNS, GILMORE.)

With especial reference to Chemical Physics. Course 1 is offered in connection with laboratory course *a* and lecture course 1 in Chemistry. Intended for first year students taking Physics or Chemistry as a major.

2. **Elementary Laboratory Physics.** *3 hrs., both semesters.*
(STEARNS, GILMORE.)

With especial reference to Mechanics, Heat, and Electricity. Open to students who have completed courses 1 and 2, or 5 and 6, in Mathematics.

3. **Optics and Chemical Physics.** *2 hrs., both semesters.*
(SANFORD)

Laboratory Course for students making Physics a major. Others will be registered for this course only by special permission. To be preceded by course 1 or course 2.

4. **Electrical and Magnetic Measurements.** *3 hrs., both semesters.* (TAYLOR.)

One hour lecture, two hours laboratory work. Open to students having had courses 1, or 2, or equivalent. Intended for students making Physics a major or pursuing the subject in connection with general scientific work. Major students in Physics will take course 4 in their third year.

5. **Electrical and Magnetic Measurements.** *3 hrs., both semesters.* (CARMAN.)

Lectures. Open to students having had course 2, and intended especially for engineering students.

6. **Mathematical Physics.** *2 hrs., both semesters.* (CARMAN.)

Lectures. In this course the subjects offered are changed from year to year. Each year is complete in itself, but the subjects for two successive years are chosen so as to form a connected course on general theoretical physics. In 1894–95 the subject was Thermo-dynamics.

7. **Periodic Electric Currents.** *2 hrs., both semesters.* (CARMAN.)

Lectures.

8. **General Physics.** *3 hrs., both semesters.* (SANFORD.)

Lectures for students who have had courses 2 and 3, or their equivalent.

9. **Investigation of Original Problems in the Laboratory.** (SANFORD, CARMAN.)

Courses 1, 3, 4, and 8 in Physics, with courses 1, *a*, and *b*, in Chemistry, or their equivalents, will be required of all candidates for a degree in Physics. Major students in Physics are advised to take courses 5 and 6 in Mathematics in the first year, courses 7 and 8 in the second year, and course 3 in the third year.

GRADUATE COURSES.

Graduate courses in Physics will be arranged after consultation by the faculty of the department. In general they will be laid out along two lines—Physical-Mathematical and Physical-Chemical. A knowledge of Mathematics through Analytical Geometry and Calculus will be required before entering either of the graduate courses in Physics, and a reading knowledge of French and German is much to be desired before undertaking any advanced work in Physics.

Laboratory Fees.—A charge of from *two* to *five* dollars per semester, according to the time spent in laboratory practice, payable in advance, will be made, to cover the cost of material used in the laboratories.

CHEMISTRY.

Professors STILLMAN and RICHARDSON, Associate Professor LENOX, Assistant Professor YOUNG, and Instructor MYERS.

I. LECTURE COURSES.

1. **Elementary Inorganic Chemistry.** *1 hr., both semesters.* (RICHARDSON.)

Explaining and reviewing laboratory course *a*, and open, in connection with that course, to all students in the University.

2. **Advanced Inorganic Chemistry.** *2 hrs., both semesters.* (STILLMAN.)

Experimental lectures on General Inorganic Chemistry, based on the periodic system. Open to all students who have completed courses 1 and *a*, or an equivalent.

3. **Organic Chemistry.** *2 hrs., both semesters.* (RICHARDSON.)

Experimental lectures and reviews on the Chemistry of Carbon Compounds. Open to students who have completed course 2.

4. **Industrial Chemistry.** *2 hrs., both semesters.* (STILLMAN.)

Lectures on the processes of chemical arts and industries—fuels, acid and alkali manufacturing, glass, pottery, sugar-making and refining, petroleum, dyes, etc.

Open to students who have completed courses 1 and 2 and laboratory course *b*; may be taken concurrently with course 3.

5. **History of Chemistry.** *1 hr., 2d semester.* (RICHARDSON.)

Open to students who have completed courses 2 and 3.

6. **Theories of Chemistry.** *2 hrs., 1st semester.* (STILLMAN.)

Selected topics. Open to students who have completed courses 2 and 3; may advantageously follow course 5.

7. **Urine Analysis.** *2 hrs., 1st semester.* (LENOX.)

In connection with laboratory course *f*. Open to students who have completed at least one semester's work in Quantitative Analysis.

8. **Advanced Organic Chemistry.** *1 hr., both semesters.* (YOUNG.)
Advanced topics in Organic Chemistry, including Stereo Chemistry. Open to students who have completed course 3.

9. **Toxicology.** *2 hrs., 2d semester.* (LENOX.)
In connection with laboratory course *g*. Experimental lectures on the detection of the more common organic and inorganic poisons.

Open to those who have completed at least one semester's work in Quantitative Analysis.

10. **Organic Synthesis.** *1 hr., 2d semester.* (RICHARDSON.)
Treating of the more important general reactions for the transformation of carbon compounds.

Open to students who have completed courses 3 and *c*.

11. **Elementary Chemistry.** *2 hrs., both semesters.* (YOUNG.)
This course will consist of lectures with experimental illustration and with occasional recitation. It is intended for such students as have not time to take the fuller experimental courses 1 and *a*.

Students who have received credit in courses 1 and *a*, or entrance credit in Chemistry, will not receive credit for this course. Students who have received credit in course 11, and taking 1 and *a* subsequently, will receive credit only for the one additional hour per semester.

II. LABORATORY COURSES.

a. **Elementary Inorganic Chemistry.** *2 afternoons, both semesters.* (RICHARDSON, YOUNG.)

Experiments in elementary Inorganic Chemistry in connection with course 1.

b. **Qualitative Analysis.** *3 afternoons, 1st semester.* (LENOX.)
Open to students who have completed course *a*.

c. **Preparation of Typical Carbon Compounds.** *3 afternoons, 2d semester.* (RICHARDSON.)

Open in connection with course 3 to students who have completed course *b*.

d. **Quantitative Analysis.** *4 afternoons, both semesters.* (STILLMAN, LENOX.)

Open to students who have completed courses 2 and *b*.

e. Advanced Laboratory Work. *4 afternoons, both semesters.*
(STILLMAN, RICHARDSON, LENOX.)

Considerable option will be permitted during this year as to special lines of work to be pursued. Problems in Inorganic Chemistry, Organic Chemistry, Analytical Chemistry, Industrial Chemistry, Physical Chemistry, are among the special branches from which the advanced student may choose.

Open to students who have completed course *d*.

f. Urine Analysis. *3 afternoons, 2d semester.* (LENOX.)
Open to students who have completed course 7.

g. Toxicology. *4 afternoons, 2d semester.* (LENOX.)
Open to students who are taking or have completed course 9.

Candidates for the degree of A. B. in Chemistry will be required to complete courses 1, 2, 3, *a*, *b*, *c*, and *d* in Chemistry, course 1 in Physics, courses 1 and 2 in German.

III. CHEMICAL ENGINEERING.

In recognition of an increasing field of activity for men qualified to occupy positions as superintendents and managers of manufacturing enterprises involving chemical processes, it has been decided, in co-operation with the departments of Civil Engineering and Mechanical Engineering, to offer to students the opportunity to obtain such training as will best qualify them for such positions. Experience shows the great advantage in these positions of fundamental training in principles of construction, strength of materials, steam engineering, machine designing, combined with thorough chemical training.

The degree of Engineer in Chemical Engineering will be conferred upon the completion of the following courses: Chemistry, 1, *a*, 2, 3, 4, *b*, *c*, *d*, *e*; German, 1, 2; Physics, 1; Mathematics, 1; Civil Engineering, 1, *a* and *b*; Mathematics, 2; Mechanical Engineering, 2, *a* and *b*; Mathematics, 3 and 4; Civil Engineering, 2; Mechanical Engineering, 4; Mechanical Engineering, 3; Steam Engineering Laboratory; Thesis work.

It is estimated that students entering the University with that intention will be able to take the degree in one year after the baccalaureate degree. Students pursuing this course will be given the degree of A. B. in Chemistry at the end of four years.

Laboratory Fees.—A charge of *fifteen dollars* per semester, or *thirty dollars* for the course, will be made to students in course *a*; a charge of *twenty dollars* per semester will be made to students in other laboratory courses. Students registering for more than four hours per week will be charged *twenty-five dollars* per semester. Of these charges five dollars per semester is returnable, less bills for breakage or loss of apparatus.

BOTANY.

GENERAL BOTANY.

Professor CAMPBELL, and Instructor SHAW.

1. **Elementary Botany.** *3 hrs., both semesters.* (CAMPBELL, DUDLEY.)

Study of types of the principal groups of plants, with lectures upon special morphology and classification. (Campbell's Elements of Structual and Systematic Botany.)

The aim of this course is to give the student a grounding in the principles of plant structure and classification, derived from a careful study in the laboratory of selected types, supplemented by such explanatory lectures as may be deemed necessary.

2. **Algæ.** *3 hrs., 1st semester.* (CAMPBELL.)

Lectures, reading, and laboratory work upon the special morphology and classification of the Algæ.

3. **Archegoniatæ.** *3 hrs., 2d semester.* (CAMPBELL.)

Special morphology and classification of the Archegoniatæ. Continuation of course 2.

4. **Histological Methods.** *2 hrs., both semesters.* (CAMPBELL, SHAW.)

Application of microtome sectioning to the study of the morphology and development of selected types.

5. **Experimental Physiology.** *3 hrs., 2d semester.* (SHAW.)

Laboratory work with lectures and reading.

6. **Advanced Work.**

Intended especially for graduate students.

Course 1 must precede all other courses, and students making the subject a major must complete courses 1 to 5 inclusive, and also courses 2 and 3 in Systematic Botany, before graduation. Course 6 is intended especially for graduate students, and opportunities will be given such students for carrying on special lines of work upon original problems.

Laboratory Fees.—Three dollars per semester for each course.

SYSTEMATIC BOTANY.

Professor DUDLEY.

Instruction in this Department chiefly relates to the Spermaphytes, their structure, affinities, and geographic distribution. The advanced work on the Fungi will also be given under its direction.

Course I or its equivalent is required of students intending to graduate with Systematic Botany as a major study. It is also required as a basis for courses 2, 4, and 5. An elementary knowledge of the structure of the flowering plants only is required to enter course 3.

1. **Elementary Botany.** *3 hrs., both semesters.* (DUDLEY, CAMPBELL.)

A study of plant types, etc. [See course I under General Botany.]

2. **The Fungi.** *5 hrs., 1st semester.* (DUDLEY.)

The laboratory work (three hours) will be devoted to morphology, development, and culture methods; the lectures to systematic relationships, with an account ot economically important forms.

3. **The Spermaphyta.** *5 hrs., 2d semester.* (DUDLEY.)

The morphology, histology, and affinities of the principal orders of flowering plants represented on the Pacific Slope will be studied, and an acquaintance made with as many forms as possible through field and laboratory work. In connection with certain orders a series of lectures on the forest trees, including the general principles of geographic distribution of plants, will be given. (Lectures and laboratory work.)

[4. **The Algæ and Archegoniatæ.** See courses 2 and 3 under General Botany.]

5. **Advanced Work.** *5 hrs., both semesters.* (DUDLEY.)

Advanced work and special investigation on the biology of the Spermaphytes and Fungi, including systematic studies.

Laboratory Fees.—Three dollars per semester for each course

ENTOMOLOGY.

Professor COMSTOCK, and Associate Professor KELLOGG.

The instruction in this Department is given by means of lectures, laboratory practice, and field work. In the lectures the more general questions are discussed, with the view of giving the students as broad a knowledge of the subject as is practicable in the time devoted to it. In the laboratory work especial attention is paid to the methods of investigation and to training in accurate observation.

1. **General Lecture Course.** *2 or 3 hrs., 2d semester.* (COMSTOCK.)

Lectures treating of the zoological position of insects; the habits of insects with special reference to those species that are of economic importance; and the practical application of entomology, including discussions of insecticides, and of the various methods of controlling the ravages of insects injurious to agriculture. (Lectures, January to March.)

Two hours' credit will be given on completion of the lectures. Students may extend the course to the end of the semester by laboratory work in collecting and preserving insects, and in practice in the determination of families. An additional hour of credit will be given for this work.

2. **Introductory Laboratory Course.** *3 hrs., both semesters.* (COMSTOCK, KELLOGG.)

Laboratory and field work, and one lecture a week. The course includes the study of the elementary comparative insect morphology, the determination of genera and species, and practice in collecting and preserving specimens.

3. **Economic Entomology.** *3 hrs., 1st semester.* (KELLOGG.)

Laboratory and field work, and one lecture weekly. The laboratory and field work will be devoted to methods of experiment and observation, the lectures to a discussion of the more important injurious insects (excepting the scale insects, see course 4) of the Pacific Slope. Open to students who have completed one semester of course 2.

[Course 3 will not be given in 1895-96.]

4. **Morphology and Classification of the Coccidæ** (Scale insects). *3 hrs., January–March.* (COMSTOCK.)

Laboratory and field work. Open only to students who have completed one semester of course 2.

5. Advanced Laboratory Course. *2 to 5 hrs., both semesters.* (COMSTOCK, KELLOGG.)

Special work in morphology, or classification, or in working out the life-history of insects.

Open to students who have completed course 2.

6. Public Lectures. *Daily, 1 week in February.* (COMSTOCK.)

A course treating of the more important insects of the orchards of California. This course is given in connection with a public course on Horticulture, and other lectures of general interest. All persons interested are invited to attend these lectures.

Students making entomology a major must complete courses 1 to 5 inclusive, and must have an elementary knowledge of botany and general zoology before graduation.

Special investigations in insect morphology or physiology, or in taxonomic work, will be arranged for graduate students.

Laboratory Fees.—Three dollars per semester for each laboratory course.

THE ENTOMOLOGICAL COLLECTIONS.

The entomological cabinets contain specimens of the more common species of the United States. These have been determined by specialists of the various orders, and are accessible for comparison. The collection includes many sets of specimens illustrative of the metamorphoses and habits of insects. The laboratory is equipped with microscopes and other apparatus necessary for practical work in entomology.

HORTICULTURE,

Assistant Professor E. E. SMITH.

[The courses in Horticulture were not given in 1894-95 and will not be offered in 1895-96.]

HYGIENE AND ORGANIC TRAINING.

Professor WOOD, Instructor MOSHER, and Assistants HETHERINGTON and MARCH.

The aims of this department are—(1) To provide general and special instruction in matters pertaining to the improvement and preservation of health; (2) To help the student, through individual advice and assistance, toward personal improvement and restoration of health; (3) To furnish the student, through facilities and instruction in the Gymnasium and elsewhere, opportunity for general organic development; (4) To provide a thorough training for those who wish to prepare themselves for teaching in this branch of education.

For the gymnastic training of students there are two buildings, Roble Gymnasium for the young women, and Encina Gymnasium for the young men. Both are temporary frame buildings, but are substantially built and equipped with suitable apparatus.

Excellent facilities for athletics have been provided. The young women have two tennis courts, paved with bituminous rock; the young men have four courts of the same material. In addition, the athletic grounds contain a quarter mile track, and areas for basket-ball, base-ball, foot-ball, and field sports. A small lake near the University buildings furnishes opportunity for rowing in small boats. The work in "physical training" is under the supervision of the medical director, who is the professor of hygiene and organic training.

All students are entitled to anthropometric and medical examination. The information furnished by measurement and examination gives the medical director the basis for advice to the student as to the hygienic regimen most conducive to health and development. Exercises are prescribed for the individual, first for the correction of special weakness and then for rational and symmetrical development. The regular gymnastic work is under the constant supervision of the instructors.

All students are entitled to medical advice and aid. The medical director is in his office an hour, daily, for consultation.

1. **Gymnastic Exercises.** *1 hr., both semesters.* (WOOD, MOSHER, HETHERINGTON, MARCH.)

Individual and class work with and without apparatus.

Open to all students, under the advice of the medical director. One hour of credit will be given for systematic prescribed exercise, the three exercises a week to be taken on separate days arranged according to the work of the student. (Three exercise hours a week.)

2. **Personal Hygiene.** *2 hrs., either semester.* (WOOD, MOSHER.)

Open to all students. Course 2 is designed to give the student practical knowlege upon matters pertaining to the care of the health and treatment in emergencies or "First Aid to the Injured."

3. **Sanitary Science.** *2 hrs., 2d semester.* (WOOD.)

Open to students who have completed course 2. Course 3 will take up the study of public health, general hygiene, and sanitary science. Students will prepare papers upon assigned topics.

4. **School Hygiene.** *2 hrs., 1st semester.* (WOOD.)

Open to those who are preparing to teach. A study of the child organism, special hygiene of childhood and adolescence, physiology and hygiene of the nervous system, health conditions of schools and hygiene of instruction, diseases caused or favored by school life and their prevention.

The following courses, in addition to courses 2, 3, and 4, are designed for candidates for the degree of A. B. in Hygiene and Organic Training, and for special students in this department.

[5. **General Anatomy and Physiology.** See course 1 in Physiology.]

[6. **Animal Physiology.** See course 2 in Physiology.]

7. **Applied Anatomy and Physiology.** *2 hrs., both semesters.* (WOOD.)

Course 7 takes up the study of human anatomy and physiology from the standpoint of hygiene and organic training.

8. **Kinesiology, and History of Gymnastics.** *2 hrs., 2d semester.* (WOOD.)

Special physiology of exercise, bodily mechanics, history of "Physical Education," and study of the various "Systems of Physical Training."

9. **Special Gymnastic Training.** *2 hrs., both semesters.* (WOOD, MOSHER, HETHERINGTON, MARCH.)

Includes individual and class exercises; use of all kinds of apparatus; calisthenics; light and heavy gymnastics; health and medical gymnastics, with and without apparatus. Gymnastic games. (Five exercise hours a week.)

10. **Anthropometry.** *2 hrs., 2d semester.* (WOOD, MOSHER.)

Instruction in methods of examining, measuring, and testing the body, tabulation and charting of statistics (one lecture and three laboratory hours a week).

11. **Special Courses.**

Special courses of study are laid out for advanced students according to the qualifications of each individual. Such courses include special investigations in anthropometry, diagnosis, special tests and specific effects of various kinds of activity upon the different structures and functions of the human organism.

PHYSIOLOGY AND HISTOLOGY.

Professor JENKINS, Instructors GREENE and HEATH, and Assistants WILBUR and STOLTENBERG.

UNDERGRADUATE COURSES.

1. **General Anatomy and Physiology.** *5 hrs., both semesters.* (JENKINS, HEATH, WILBUR, STOLTENBERG.)

This course is designed to give a general view of the laws of the structure and the activities of organisms. The work will give occasion to discuss many questions of General Biology. It consists of: First, the study of the cell and its activities as shown in the unicellular organisms, in reproductive cells, and in individual cells of many tissues; second, the study of the laws and course of development, resulting in higher differentiations in structure, and specializations in function exhibited in a selected series of organisms, both animals and plants, of increasing complexity; third, the comparative study of the physiological processes of forms placed under widely different conditions. The latter part of the course is occupied with an introduction to the embryology, anatomy, and physiology of vertebrates. (Two lectures and seven and a half laboratory hours a week.)

2. **Animal Physiology.** *3 hrs., both semesters.* (JENKINS, GREENE.)

This course is to be preceded by course 1. It includes an experimental course in Physiology based upon Foster's Physiology as the text. (One lecture and five laboratory hours a week.)

3. **Histology.** *3hrs., both semesters.* (HEATH.)

This course includes both the study of the tissues in a comparative way, and the history of their development. Open to those who have taken course 1, or its equivalent. Students with Physiology as their major are advised to take courses 2 and 3 together. (One lecture and five laboratory hours a week.)

4. **Special Courses in Physiology.** *2 to 5 hrs., both semesters.* (JENKINS, GREENE.)

These courses are open to those who have taken courses 1, 2, and 3. These courses will be a continuation of course 2, but along lines of more advanced study of special subjects. A special course will be arranged for each individual student. The time of each course will vary according to the exigencies of the case.

5. **Special Courses in Histology.** *2 to 5 hrs., both semesters.* (HEATH.)

These courses are open to those who have taken courses 1 and 3. Under this head a special course in Histology, Histogenesis, or in Cell Morphology, will be planned for each individual student, with the end in view of giving opportunity for a more extended study of some phase of one of these subjects, and a careful drill in the technique of the subject. The time for each course will be fixed to accord with the nature of the work.

6. **Structure and Functions of the Nervous System and the Sense Organs.** *3 hrs., both semesters.* (JENKINS.)

It is desirable that students in this course should have had at least the biological training represented by course 1. (One lecture and five laboratory hours a week.)

7. **Mammalian Anatomy.** *2 to 5 hrs., 2d semester.* (GREENE.)

8. **Blood and Circulation.** *3 hrs., 1st semester.* (GREENE.)

Advanced course open only to those who have completed courses 1, 2, and 3.

9. **Teachers' Course in General Physiology.** *3 hrs., 1st semester.* (JENKINS.)

This course is arranged to give a practical illustration of the methods of the study and teaching of Physiology in the elementary schools. Students who expect to teach are received into this course on the recommendation of the Department of Education. (One lecture and five laboratory hours a week.)

10. **Journal Club.** *1 hr., both semesters.*

Students in the advanced classes will be expected to meet once a week to discuss current literature in Physiology and Histology.

11. **Seminary in Physiology and Histology.** *2 hrs., both semesters.* (JENKINS, GREENE, HEATH.)

Open to graduate students.

Candidates for the Bachelor's degree who select Physiology and Histology as a major will be expected to take courses 1, 2, 3, and 10, and at least two semester's work of five hours each to be made up from courses 4, 5, 6, 7, and 8; and in addition courses 1 and *a* in Chemistry, and the first semester of Vertebrate Embryology (course 4 in Zoology.)

Laboratory Fees.—Five dollars per semester.

GRADUATE COURSES.

The graduate courses in Physiology and Histology will be planned in the case of each individual student. They will include the thorough study of some of the more recent special treatises of various subjects in Histology and Physiology, and a repetition of a sufficient number of experimental investigations to give a discipline in the methods of investigation. There will be given at different times a series of advanced lectures on Physiological and Histological subjects. The graduate students will meet weekly to discuss the journals of the Department, and will participate in the work of the Seminary in Physiology and Histology. Students in this department will occupy the latter portion of their course mainly on some original research, the subject of which is determined by their previous training and their inclinations. The collateral subjects to be pursued with the major will be chosen for each candidate with reference to his particular needs.

PREPARATORY MEDICAL COURSE.

Students intending to enter on the study of medicine, are advised to take Physiolagy and Histology as a major subject, with Chemistry, Physics, Comparative Anatomy of the Vertebrates, and Hygiene among the collateral subjects. Such a course gives that foundation both in scientific knowledge and in skill in experimental Physiology, and in Histological and Anatomical technique, which will make it possible to accomplish the medical course of the best medical schools in a much shorter time and with much greater advantage.

ZOOLOGY.

Professor GILBERT, Assistant Professor PRICE, and Assistant HARTLEY.

1. **General Zoology.** *3 hrs., both semesters.* (PRICE).

A laboratory course, involving the study of representatives of the principal groups of animals, together with lectures on their structure and classification, and on the general laws of biology which they illustrate.

2. The Vertebrates. *2 hrs., both semesters.* (THOBURN.)

A general course in the classification of vertebrate animals, with studies in the habits and the geographical distribution of species. The course will include field excursions and a study of the methods of collecting and preserving specimens.

3. Comparative Anatomy of the Vertebrates. *3 hrs., both semesters.* (GILBERT.)

A more detailed examination of vertebrate morphology, including dissection of representatives of the several classes of vertebrates, with comparative studies in vertebrate osteology, the nervous and circulatory systems, etc.

4. Vertebrate Embryology. *2 hrs., both semesters.* (PRICE.)

A comparative study of the development of the shark, salamander, chick, and rabbit. The development of the shark will be made the center of the work.

5. Advanced Embryology. *2 hrs., both semesters.* (PRICE.)

The work during the first semester will consist of a detailed study of the development of the nervous system, the urinogenital, or some other important system of organs. During the second semester, each student will be given some special problem, usually in the line of the verification of some piece of original work.

6. Ichthyology. *2 hrs., both semesters.* (GILBERT.)

A course of lectures and laboratory work, including an examination of the larger groups of fishes, with special reference to the characters on which they are based, and including practical work in the discrimination of species.

7. Advanced Ichthyology. *3 hrs., both semesters.* (GILBERT.)

Special problems in the morphology and classification of fishes will be set for advanced students prepared for such work.

[8. **Organic Evolution.** See under Ethics, course 10.]

The Zoological Club meets bi-weekly to discuss and record the original observations of its members. Field excursions are frequently taken, and a zoological exploration of the vicinity of Palo Alto is in progress.

Course 1 or its equivalent must precede all others, and courses 1 to 7 or their equivalents will be completed before graduation by all regular students making Zoology their major study.

Work for graduate and special students will be laid out in accordance with their individual needs and preferences.

Laboratory Fees.—Five dollars per semester.

THE ZOOLOGICAL MUSEUM.

The Zoological Museum contains a very full representation of the fishes of North America, consisting of about 5,000 alcoholic specimens, representing about 1,500 species. These include among others a valuable series of the deep-water fishes of the Pacific and large collections from the West Indies and the Hawaiian Islands. During the past year large additions have been made to the collections of reptiles, birds, and mammals, special attention being given to the fauna of California and adjoining States.

Material illustrating the principal groups of invertebrates is ample for class instruction.

GEOLOGY.

Professor BRANNER, and Associate Professor J. P. SMITH.

1. **Dynamic and Structural Geology.** *3 hrs., 1st semester.* (BRANNER.)

Geikie's Class-book of Geology.

2. **Economic Geology.** *2 hrs., 2d semester.* (BRANNER.)

Lectures, with visits to mines.

Open to students who have completed course 1.

3. **Topographic Geology.** *2 to 5 hrs., both semesters.* (BRANNER.)

Field and laboratory work, with the construction of geologic maps, models, and sections.

Open to students who have completed course 1.

4. **Special Courses.** (BRANNER.)

Special courses of instruction and training are laid out for advanced and special students according to the needs and qualifications of each individual. Special investigations are taken up by advanced students as rapidly as it is possible for them to undertake such work advantageously.

5. **Mineralogy.** *2 hrs., both semesters.* (J. P. SMITH.)

a. Blowpipe analysis (first semester). *b.* Elementary Crystallography and Physical Mineralogy (second semester).

6. **Advanced Mineralogy and Petrography.** *5 hrs., both semesters.* (J. P. SMITH.)

a. Mathematical, Physical, and Chemical Crystallography (first semester). *b.* Descriptive Mineralogy and Petrography, with special studies of the rock-forming minerals (second semester).

Open to advanced students and graduates.

7. **Paleontology.** *4 hrs., both semesters.* (J. P. SMITH.)

a. Systematic Paleontology, or the history and character of organisms (first semester). *b.* Historical Geology, or the history and character of formations (second semester).

Open to students who have completed course 1.

8. **Paleontology.** *2 to 5 hrs., both semesters.* (J. P. SMITH.)

Original investigation of various problems in paleontology, especially of the distribution of faunas. This course will consist entirely of private work, in field and laboratory.

Open to advanced students and graduates.

Laboratory Fees.—Three dollars per semester in course 5.

MINING ENGINEERING.

1. **Mining Machinery and Mill Work.**

2. **Assaying.** *2 hrs., 2d semester.* (LENOX.)

Course 2 assumes course 2 in Physics, courses 2, 3, and 8 in Civil Engineering, courses 1, *a*, and *b* in Chemistry, and courses 1 and 2 in Geology.

3. **Metallurgy.**

4. **Ore Dressing, etc.**

5. **Mining.**

[Courses 1, 3, 4, and 5 will not be given in 1895-96.]

Laboratory Fee.—Twenty dollars in course 2.

DRAWING AND PAINTING.

Associate Professor BROWN, and Assistant Professor CLARK.

The instruction in this Department is given with a view to its educational value. The aim is to give power to observe visible facts, skill to record them, intelligence to understand them, and esthetic sensibility to feel their significance and beauty. Different materials, as pencil, pen, sepia, etc., are used at different times, because each gives a peculiar kind of mental and manual discipline and helps the student to find that material which most naturally lends itself to the expression of those qualities in nature that particularly appeal to him.

The student begins with the study of the laws of perspective, of light and shade and of color, in their practical application — which, being a science, can be taught, and afterwards considers the fine art of representation, which, being art, can be "learned but not taught." Still, so far as is possible, by the study of examples and of nature and the general cultivation of the esthetic and creative faculties, art is taught. It is assumed that sensibility and knowledge and skill underlie the only valuable judgments and tastes, whether regarding things of nature or of art. Gradually, and more and more as the work advances, esthetic questions are considered and work is criticised from that side. As an aid to this, some attention is given to the literature of the subject, and, as soon as examples are procured, will be given to the study of drawings by various masters in various materials.

Considerable freedom is allowed advanced students as to subjects and the materials to be used. It is not intended to give a bias toward any particular technical style, the only technical requirement being that the work shall be done on the fundamental principles of sound workmanship. Landscape work is given as much attention as figure work. The training is such that scientific students can easily work into scientific illustrating, and whatever assistance in this line is practicable will be given.

In some of the courses there is indicated more work, or a greater variety, than can be taken by any one student in the time allotted. The student is to choose, with the approval of the instructor, which he will take. So far as possible each student is treated separately and is given the practice he most needs.

1. Elementary. *2 hrs., 1st semester.* (CLARK.)

a. Methods of observation, and their application to elementary flat copying with the lead pencil, of lines, squares, circles, mathematical curves, and simple outlines of natural forms. *b.* Outlining the geometrical model. *c.* Shading the geometrical model. Memory and time sketches required from time to time throughout.

Open to all students, but arranged especially for students in he Engineering courses.

[Course 1 is not a preparation for the second semester of course 2.]

2. Elementary Drawing, Light and Shade, Still-life, and Landscape. *3 hrs., both semesters.* (CLARK)

a. An analysis of methods of observation, with application to elementary flat copying with the lead pencil, of lines, squares, circles, mathematical curves, and simple outlines of natural forms. *b.* Outlining the geometrical model. *c.* Scientific perspective. *d.* Shading exercise, with pencil, pen, or wash. *e.* Shading geometrical model. *f.* Graded exercise in still-life drawing in light and shade, in wash, pen, or pencil, with special attention given to correct interpretation of values of local colors. *g.* Studies in line and wash. *h.* Drawing from nature—outdoors. *i.* Drawing from the cast. Time and memory sketches. (Hamerton's Graphic Arts, Ruskin's Elements of Drawing, Modern Painters, and Laws of Fesole, Allonge's Charcoal Drawing, and Tyrwhitt's Pictorial Art.)

Open to all students.

3. Landscape, Casts, and Life Work. *4 hrs, both semesters.* (BROWN.)

a. Drawing from nature—landscape. *b.* Casts. *c.* Time and memory drawings. *d.* Elementary study of oil painting. *e.* Drawing from life or from nature (landscape). Oil painting in still-life may be taken up if the student's power of drawing warrants it.

Open to those who have had course 2 or its equivalent.

4. Scientific Perspective. *2 hrs., 2d semester.* (CLARK.)

a. Theory of perspective and applications in assumed problems, with instruments. *b.* Use of principles of perspective in actual problems, from nature. *c.* Perspective criticism and study of drawings and photographs.

Open to students who have had or who are taking course 1 or course 2.

5. Architectural Draughting. *3 hrs., both semesters.* (CLARK.)

a. Lectures on the elementary principles of Architecture. *b.* House planning and wood construction. *c.* Study of masonry in modern American architecture. *d.* Design in masonry.

Open to students who have had or who are taking course 2.

6. Drawing from Life, Head and Figure; Still Life in Color. *3 hrs., both semesters.* **(BROWN.)**

CIVIL ENGINEERING.

Professors C. D. MARX, WING, and HOSKINS, and Assistant Professor FISH.

I. GENERAL WORK.

Linear Drawing and Descriptive Geometry

1a. Linear Drawing and Lettering. *1 hr., 1st semester.* (FISH.) (Six hours a week, first half of first semester.)

1b. Descriptive Geometry. *2 hrs., 1st semester; 4 hrs., 2d semester.* (FISH.)

Including shades, shadows, and perspective. (Lectures and recitations, two hours a week, drafting, six hours; second half of first semester and second semester.

Course 1*a* is open to all students, and is required of students in Engineering; 1*b* is open to students who have completed solid geometry and 1*a*, and is required of students in Engineering.

Applied Mechanics.

2. Applied Mechanics. *5 hrs., both semesters.* (HOSKINS.)

a. Graphic Statics. This course begins with a discussion of the general theory of complanar forces applied to a rigid body. The principles relating to the composition, resolution, and equilibrium of forces are deduced graphically, and graphic methods are given for the solution of statical problems. Then follow applications to the determination of stresses in simple framed structures, including trusses sustaining both fixed and moving loads. The determination of centroids and moments of inertia of plane areas is then taken up, but this subject is treated only so far as it has useful applications in the solution of problems in the design of structures. (Lectures and recitations three hours a week, drafting six hours; first ten weeks of first semester.)

b. Mechanics of Materials. Under this head are treated the strength and elastic properties of the ordinary materials of engineering. The main subjects covered are simple tension, compression, and shear; theory of flexure, with applications to simple and continuous beams; theory of long columns; torsion and shafts; repeated stress; sudden stress and resilience. (Lectures and recitations five hours a week for twelve weeks, following course 2*a*.)

c. Hydrostatics and Hydraulics. This course treats of fluid pressure, the principles of fluid equilibrium, and the laws governing the flow of water through orifices, over weirs, in closed conduits and in open channels. (Lectures and recitations five hours a week for twelve weeks, following course 2*h*.)

Open to students who have completed courses 1, 2, 3, and 4 in Mathematics; required of all students in Civil Engineering.

3. **Testing of Materials.** *2 hrs., 2d semester.* (HOSKINS.)

In this course each student is required to make a series of experiments, testing the strength and elastic properties of wrought iron, cast iron, steel, timber, brick, stone, and cement. A careful record of all experiments is required of every student.

Open to all students who have taken or are taking course 2*b*; required of all students in Civil Engineering.

II. SPECIAL WORK.

Topographical and Geodetic Engineering.

4. **Elementary Surveying.** *5 hrs., 1st semester.* (MARX.)

This course treats of surveying instruments and their adjustment, followed by the study of the various methods of surveying and their application in actual field work. The drafting of the course includes topographical mapping and sketching. (Lectures and recitations, two hours; drafting and field work, nine hours.)

Open to students who have completed courses 1 and 2 in Mathematics and 1*a* in Civil Engineering; required of all students in Civil Engineering.

5. **Geodesy.** *5 hrs., 1st semester.*

The treatment of this subject will include methods of base line and angle measurements, the adjustment of observations, geodetic levelling, and map projections. (Lectures and recitations, two hours; drafting and field work, nine hours.)

Open to students who have completed courses 1, 2, 3, and 4 in Mathematics, and courses 1*a*, 1*b*, and 4 in Civil Engineering; required of students who have their major in Geodetic Engineering.

[Course 5 will not be given in 1895-96.]

Railroad Engineering.

6. **Economic Theory of Railroad Location.** *5 hrs., 2d semester.* (MARX.)

Including Railroad Surveying, Location, and Construction. (Lectures and recitations, two hours; drafting and field work, nine hours.)

Open to students who have completed course 4 in Civil Engineering; required of all students in Civil Engineering.

7. **Railroad Operation and Management.** *3 hrs., 1st semester.*
Lectures and recitations.

[Course 7 will not be given in 1895-96.]

It is the intention to offer ultimately a special course in Railroad Engineering in connection with the department of Economics. The collection of railroad books in the Hopkins Library offers exceptional opportunities for research in this line.

Structural Engineering.

8. **Elements of Design.** *5 hrs., both semesters.* (WING.)
The course is general in character, dealing with fundamental principles of wide application in the design of civil engineering structures.

a. Structural Materials. The end sought is a knowledge of the physical properties and methods of manufacture of constructive materials, which will lead to the design of safe and economical engineering structures. This includes a study of the growth, supply, and preservation of timber trees, the mineralogy and metallurgy of iron, quarrying, stone cutting, and manufacture of masonry materials, with methods of testing and selecting materials for a given purpose.

b. Structural Details. The work is elementary in character, dealing with the applications of the principles of Mechanics to the design of structural details. Wooden joints, riveted joints, and pin-connected joints are taken up in order.

c. Structural Design. The work is intended for general application to the design of structures. The work of course 2 (*a* and *b*) is extended to the analytical and graphical determination of stresses in highway bridge trusses, girders, and mill building details. Designs, including working drawings and bills of material with estimate of cost, are made.

9. **Railway Bridges.** *5 hrs., both semesters.* (WING.)
Open to students who have completed course 8. The stresses in modern types of railroad bridges are determined, including cantilever, swing, and suspension spans, masonry arches, and arch ribs. Designs are made by each student to fulfill actual conditions, the parts proportioned, and bills of material prepared as a basis for estimating the cost. Special attention is given to the study of details, shop methods, and economy in manufacture.

10. **Non-Simple Structures.** *5 hrs., 1st semester.*

In this course such structures as swing and suspension bridges, continuous trusses, elastic arches, and building skeletons will be designed, extending the work of course 9. Lectures and drafting.

[Course 10 will not be given in 1895–96.]

11. **Seminary.** *5 hrs., 2d semester.*

The student will be assigned some subject in the line of bridge engineering for special investigation and discussion, and involving the preparation of a thesis.

[Course 11 will not be given in 1895–96.]

Hydraulic Engineering.

12. **Water Supply Engineering for Towns and Districts.** *5 hrs., 1st semester.* (MARX.)

Sources of Supply. Collecting and storing of water either for water supply of towns or for irrigation purposes. Settling, filtering, conducting, and delivering of water, including the study and design of all accessory works. (Three hours lectures and recitations, six hours drafting.)

Open to students who have completed courses 2, *a* and *b*, 3, 4, and 8; required of all students who take their major in Hydraulic Engineering.

13. **Sanitary Engineering.** *5 hrs., 2d semester.* (MARX.)

Including sewerage of towns and drainage of lands. Special attention will be given to the study of all municipal sanitary problems, such as removal of sewage, destruction of garbage, construction, maintenance, sweeping, and repairs of streets and pavements. (Three hours lectures and recitations, six hours drafting.)

Open to students who have completed courses 2*a* and *b*, 3, 4, 8, and 12; required of all students who take their major in Hydraulic Engineering.

14. **Hydraulic Motors.** *3 hrs., 1st semester.* (HOSKINS.)

A discussion of the theory of the main types of turbines. Special attention is given to the application of graphic methods to the solution of some of the main problems in turbine design.

A few lectures on the general theory of energy and on relative motion are given as an introduction to the course.

Open to students who have completed course 2.

III. FIFTH YEAR COURSES.

No fifth year courses in Civil Engineering will be given in 1895–96.

MECHANICAL ENGINEERING.

Professor A. W. SMITH, Instructor G. H. MARX, and Assistants PETERSON and SOULE.

The following courses in Mechanical Engineering are offered. In connection with these the student may take courses in mathematics, pure and applied mechanics, chemistry, physics, and drawing, thus making up the professional part of the course, and may also elect such work from the general courses as time and preparation admit.

1. **Shop Work.** *2 or 3 hrs., each semester.* (PETERSON, SOULE.)

a. Woodworking and Pattern Making. (Two exercises a week, through the year.)

b. Foundry Work. (Three exercises a week, half year.)

c. Forge Work. (Three exercises a week, half year.)

d. Machine-shop Work. (Three exercises a week, through the year.)

[Course 1, *b* and *d*, will not be given in 1895-96.]

Open to all students, and required of students in Mechanical Engineering.

2. **Elementary Machine Design.** *5 hrs , both semesters.* (A. W. SMITH.)

a. Constructive Materials. Study of the manufacture and physical qualities of material. Intended to prepare the student for selection of materials for machine parts. The drafting work consists of practice in making working drawings. (Three hours a week lectures and recitations, six hours in the drafting room, first semester.)

Open to students who have had elementary chemistry, and required of students in Mechanical Engineering.

b. Motion, Force, and Work in Machines. (Three hours a week lectures and recitations, six hours in the drafting room, second semester.)

Open to students who have completed solid geometry and who are taking course 4 in Mathematics, and required of students in Mechanical Engineering.

3. **Elementary Machine Design.** *4 hrs., both smesters.* (A. W. SMITH.)

a. Machine Elements. Study of fastenings, bearings, sliding surfaces, etc., of cross sectional and outline forms and of machine support. (Two hours a week, recitations and lectures, six hours in the drafting room, first semester.)

Open to students who have completed course 2, *a* and *b*, and who are taking course 2 in Civil Engineering; required of students in Mechanical Engineering.

b. Proportion of Stress Members of Machines, including steam engines and boilers. (Two hours a week, lectures and recitations, six hours in the drafting-room, second semester.)

Open to students who have completed courses 2 and 3*a*, and who are taking course 2 in Civil Engineering; required of students in Mechanical Engineering.

4. **Steam Engineering.** *2 hrs., both semesters.* (A. W. SMITH.)

Mechanical theory of heat and its application. Lectures and recitations. (Text-book: Ewings's Steam Engine.)

Open to students who have completed Calculus and the subject of Heat in the department of Physics; required of students in Mechanical Engineering.

5. **Steam Engineering.** *2 hrs., both semesters.* (G. H. MARX.)

Mechanical laboratory. Testing of engines and boilers, and experimental investigation of correlated problems.

Open to students who have completed course 4, and required of students in Mechanical Engineering.

6. **Special Problems in Mechanical Engineering.**

2 hrs., both semesters. (A. W. SMITH, G. H. MARX.)

Treated by lectures, and the seminary method.

This course is intended for fourth year students, and may be either in special design, or experimental work.

7. **Works Administration.**

In 1895-96 a course of ten lectures on subjects bearing upon the administration of manufacturing works, will be given by Mr. JOHN RICHARDS, of San Francisco.

No fifth year courses will be given in 1895-96.

ELECTRICAL ENGINEERING.

Professor PERRINE, and Assistant FARMER.

Believing that American practice has justified the separation of the Electrical Engineer from the Electrical Manufacturer, and that it has defined the Engineer to be one who is engaged upon the solution of practical problems by the aid of obtainable apparatus, the Electrical Engineering courses have been planned for the constructor of engineering works rather than for the manufacturer of machinery. While keeping this aim in view the rapid changes in the profession have not been lost sight of, and the underlying principles of correct design are dwelt upon to such an extent as will fit the Engineer to arrive at just decisions on the merits of established or proposed methods.

Before entering on the studies directly connected with this Department the student pursues courses in Elementary Mathematics, Mechanics, Physics, and Chemistry; and at the same time that the Electrical Engineering courses are taken collateral work is carried on in the practice and theory of electrical measurements and mechanical construction.

Students intending to make Electrical Engineering a major are advised to present among their entrance subjects, Advanced Algebra, Solid Geometry, Trigonometry, Physics, Drawing, French or German. Special students should have completed English, Elementary Algebra, and Plane Geometry.

UNDERGRADUATE COURSES.

1. **Constructive Materials and Machinery.** *3 hrs., both semesters* (PERRINE.)

(Two hours lectures and recitations, three hours drafting.)

a. Materials and methods of line construction for electric lighting, electric railways, power transmission, telegraphs, and telephones. (First semester.)

b. The elements of dynamo machine design, with the discussion of the principles involved as exemplified in existing American apparatus used in lighting, power transmission, mining, etc. (Second semester.)

Open to students who have completed course 2 in Physics.

2. **Application and Design.** *2 hrs., both semesters.* (FARMER.)

Field, drafting, and laboratory work.

Open to students who have completed course 2 in Physics.

3. **Central Station Design and Management.** *2 hrs., both semesters.* (PERRINE.)

The fundamental principles of the design of central stations for electric lighting plants and railroads, writing of specifications, awarding contracts, selecting machinery, management and finance of electric plants. Lectures and recitations.

Open to students who hav ompleted course 1.

4. Engineering Construction. *2 hrs., both semesters.* (PERRINE, FARMER.)

Practice in planning electrical plants, and the solution of engineering problems. Laboratory and drafting.

5. Recent Applications of Electricity. *1 hr., both semesters.* (PERRINE.)

A free discussion of the newest applications of electricity appearing in the technical journals.

In connection with course 5 it is aimed to have as many special lectures as possible. The lecturers in 1894-95 have been the following:

Mr. F. F. BARBOUR, Mgr. Power and Mining Dept., General Electric Co., San Francisco.

Lieut. W. F. C. HASSON, Consulting Engineer, San Francisco.

Mr. G. P. LOW, Electrician, Pacific Insurance Union, San Francisco.

Mr. F. P. MEDINA, Electrician, Pacific Postal Telegraph Co., San Francisco.

Mr. H. A. RUSSELL, Mgr. San Francisco Agency, Westinghouse Electric and Manufacturing Co.

GRADUATE COURSES.

Special courses will be offered to those who have completed the undergraduate work in Electrical Engineering, and to those fitting themselves for special branches of the profession whose previous preparation is satisfactory to the Professor.

6. Dynamo Machinery Design. *2 hrs., both semesters.* (PERRINE.)

The theory and practice of the mechanical and electrical design of direct and alternating current generators and motors.

7. The Theory and Practice of the Design of Inductive Apparatus. *1 hr., both semesters.* (PERRINE.)

8. Telegraphy and Telephony. *2 hrs., both semesters.* (PERRINE.)

The design and construction of telegraph and telephone lines, apparatus, and switch boards.

9. Special Applications of Electricity. *2 hrs., both semesters.* (PERRINE.)

Apparatus for electric welding, mining, metallurgy; electrolysis in tanning, bleaching, purification of sewage, etc.

Laboratory Fees.—Three dollars per semester in courses 2 and 4.

The Department has been especially indebted to the following companies for gifts of apparatus and supplies: Bishop Guttapercha Co., New York; Cutter Elect. and Mfg. Co., Chicago; Electric Storage Battery Co., Philadelphia; The General Electric Co., San Francisco; The Interior Conduit Co., New York; C. S. Knowles & Co., Boston; The Leclanché Battery Co., New York; The New England Batt. Co., Providence, R. I.; The Okonite Co., New York; The Pacific Postal Telegraph Co., San Francisco; John A. Roebling's Sons Co., San Francisco; Washburn & Moen Mfg. Co., San Francisco.

UNIVERSITY EXTENSION.

The organization of University Extension societies is not undertaken by the University, but its professors are, in general, prepared to respond to any demands for courses of lectures not conflicting with University duties. They are also willing, whenever occasion arises, to undertake work in Teachers' Institutes, and to take part in lecture courses in neighboring towns.

In addition to a large number of single lectures delivered in the various cities and towns of the State, the following more extended courses of work were presented during the year 1894-95.

Evolution. Three lectures in Portland, Oregon. President JORDAN.

Applications of the Science of Evolution. Six lectures in Oakland. President JORDAN.

Good Government. Four lectures in San Jose. President JORDAN.

Education. Six lectures in Riverside. President JORDAN.

Biology. Twenty-four lectures, with laboratory work, in Eureka. President JORDAN and Professor THOBURN.

Psychology of Childhood. Three lectures and three conferences in Stockton. Professor BARNES.

Social Evolution. Three lectures in Portland, Oregon; three lectures in San Francisco; four lectures in San Jose. Professor ROSS.

Modern Poetry and Modern Life. Eight lectures in San Jose. Professor HUDSON.

Masters of Greek Sculpture. Seven lectures in Sacramento. Professor MILLER.

Applied Sociology. Sixteen lectures and class-room work, Pacific Theological Seminary, Oakland. Instructor JENNESS.

UNIVERSITY LECTURES, ETC.

Public lectures on subjects of general interest, by members of the Faculty or by persons invited from abroad, are given in the Chapel, usually on Tuesday evenings. The following is a list of the lectures and subjects, April, 1894 to April, 1895:

PROFESSOR JULIUS GOEBEL.
1. America in German Poetry.
2. Geographic and Scientific Conceptions in Goethe's Faust.
PROFESSOR JOHN M. STILLMAN.
The Anti-Chinese and Labor Riots of 1877.
MRS. CHARLOTTE PERKINS STETSON, San Francisco.
1. Art for Art's Sake.
2. An Ideal Newspaper.
MESSRS. A. J. TREAT AND HOWARD C. TIBBITTS, San Francisco.
Lantern Lecture on the World's Fair.
PROFESSOR EDWARD H. GRIGGS. *A Study in Margins.*
PRESIDENT JORDAN, PROFESSORS ROSS AND BRUN.
Anti-Spoils Symposium.
COL. SAMUEL MERRILL, Indianapolis, Ind. *India.*
PROFESSOR MELVILLE B. ANDERSON. *Matthew Arnold.*
PROFESSOR SAMUEL J. BRUN. *Pierre Loti.*
PRESIDENT DAVID S. JORDAN.
1. The Fate of Icidorum.
2. The Evolution of the Common Man.
3. Sinaloa.
MR. ALFRED HOLMAN, San Francisco. *A Talk on Oregon.*
MISS ELEANOR CALHOUN. *Readings from Shakspere and Racine.*
PROFESSOR CHAS. D. WALCOTT, Washington, D. C.
The Work of the U. S. Geographical Survey.
PROFESSOR BOLTON C. BROWN. *Art in Dress.*
MR. WALTER CAMP, New Haven, Conn. *College Athletics.*
MR. ELI T. SHEPPARD, San Francisco. *The War in Corea.*
PROFESSOR ROBERT J. ALEY. *Daniel Kirkwood.*
PROFESSOR EDWARD A. ROSS. *Dollars and Darwinism.*
PROFESSOR JOHN E. MATZKE. *The Birth of a Mystery.*
PROFESSOR JOHN H. COMSTOCK. *The Habits of Spiders.*
MRS. EMMA P. EWING, Boston, Mass.
The Missing Link in the Food Question.
PROFESSOR WILLIAM H. HUDSON. *The Friendship of Books.*
PROFESSOR EARL BARNES.
The Schools and School Systems of England.

MR. B. G. NORTHROP, Clinton, Conn. *Village Improvement.*
PROFESSOR EDWIN H. WOODRUFF. *The English in Egypt.*
PROFESSOR WILLIAM J. HUSSEY. *Some Recent Comets.*
PROFESSOR H. R. FAIRCLOUGH. *The Ancient and Modern Stage*
PROFESSOR WALTER MILLER. *A Trip Through Athens.*
PROFESSOR FRANK ANGELL. *The New Witchcraft.*

THE REV. HUGH R. HAWEIS, A.M., London, England.
1. Music the Art of the Age.
2. Tennyson and Tennysoniana.
DR. FRANZ BOAZ, Clark University. *Anthropology.*
MR. FREDERICK WARDE, New York. *Shakspere and His Plays.*
THE REV. JENKIN LLOYD JONES, Chicago. *Emerson.*

FOUNDERS' DAY EXERCISES—March 9, 1895:
The Successor to the Established Church—PROFESSOR EARL BARNES.
Some Tendencies in Women's Education—PROFESSOR MARY ROBERTS SMITH.

Lectures Before the Law Department, Thursday Evenings:

WILLIAM S. BARNES, ESQ., District Attorney, San Francisco.
Criminal Procedure under the California Code.
PROFESSOR SAMUEL J. BRUN.
Criminal Procedure in France.
DR. EDWARD R. TAYLOR, San Francisco.
The Practice of the Law.
MR. JOSEPH HASBROUCK, San Francisco. *Chancellor Kent.*
JUDGE W. H. MYRICK, San Francisco. *Legal Reminiscences.*
MR. CHARLES PAGE, San Francisco.
Extradition and the Ezeta Case.
JUDGE W. W. MORROW, San Francisco.
Admiralty Jurisdiction of the United States.
MR. A. C. FREEMAN, San Francisco.
Case Law and Statute Law.
MR. WARREN OLNEY, San Francisco. *John Marshall.*

INTERCOLLEGIATE DEBATES, ETC.

An INTERCOLLEGIATE DEBATE, under the auspices of the Associated Students of Stanford and of the University of California is held in San Francisco in April of each year. A silver medal of the value of one hundred dollars has been offered by the San Francisco *Examiner* to the University first successful in three contests.

The question in 1894 was, "*Resolved*, That the national ownership and operation of the railroads of the United States would better subserve the interests of the people than the ownership and operation by private corporations. It being conceded, first, that the change can be effected legally and constitutionally at a cost not to exceed six billion dollars, which is assumed to be a just and reasonable compensation; and second, that all government railroad officials and employees shall be appointed and promoted upon a basis of business efficiency only."

The representatives of Stanford were Messrs. ARTHUR M. CATHCART, WILLIAM DOHERTY, and Miss CORA M. PALMER.

The question for 1895 is, "*Resolved*, That in California, any legislative enactment, not deemed urgent, shall be submitted to a vote of the citizens upon petition of five per cent of the qualified voters, provided such petition be made within sixty days; and, furthermore, that any measure proposed by a petition of ten per cent of the voters, shall be submitted to the people by the Legislature."

The Stanford contestants are Messrs. BENJAMIN F. BLEDSOE, E. DELOS MAGEE, and BURTON M. PALMER.

The CARNOT MEDAL, for individual excellence in public speaking, given by the Baron de Coubertin, in honor of the late President Sadi-Carnot, is competed for by three representatives each of Stanford and of the University of California. The subject for 1895 is, "Was Casimir-Perier justified in resigning the presidency?"

The Stanford contestants are Messrs. WYNNE P. HARRINGTON RICHARD L. SANDWICK, and HENRY D. SHELDON.

A special prize of fifty dollars was offered by President JORDAN in 1895 for the best essay on Government Loans on Land. The prize was divided between Messrs. ORRISON V. EATON and HENRY HARWOOD, their essays being regarded as of equal merit.

THE UNIVERSITY CHAPEL.

The following are the speakers and subjects, April, 1894, to April, 1895, in the University Chapel, Sunday mornings, at eleven o'clock, in accordance with the provision noted on page 25.

THE REV. FRANK N. GREELEY, San Jose.
What think ye of Christ?
THE REV. EDGAR LEAVITT, Santa Cruz. *Worthy Your Vocation.*
THE REV. R. F. MACLAREN, D. D., San Jose.
1. Apollos and the Divine Ideal of Excellence.
2. The Loftiest Ascent of Man.
THE REV. NG POON CHEW, San Francisco.
The Evangelization of China.
THE REV. ALFRED KUMMER, D. D., San Francisco.
Saul of Tarsus.
THE REV. S. GOODENOUGH, D. D., Oakland.
The Practical Value of Religion.
MR. DAVID HEAP, Santa Clara. *Children of Charity.*
THE REV. GEORGE MCCORMICK, Salinas. *Believing.*
THE REV. BP. DANIEL A. GOODSELL, D. D., San Francisco.
Baccalaureate Sermon.
PROFESSOR W. W. THOBURN.
1. Witnessing for the Truth.
2. The Mission of Christ.
THE REV. GEORGE B. HATCH, Berkeley. *God's Idea of Himself.*
THE REV. HORATIO B. STEBBINS, D. D., San Francisco.
The True Rank of the Intellect.
THE REV. A. H. BRIGGS, San Jose.
The Attractive Power of Calvary.
RABBI G. A. DANZIGER, San Jose. *The Kingdom of Christ.*
THE REV. JOHN B. WAKEFIELD, San Jose. *Duty.*
THE REV. W. T. JORDAN, Dixon. *The Secret Christian.*
THE REV. ROBERT F. COYLE, D. D., Oakland. *He Can Who Will.*
THE REV. D. A. HAYES, Napa. *Flint Faces and Dough Faces.*
MR. CHARLES MICHENER, New York City.
The Y. M. C. A. Movement.
PRESIDENT DAVID S. JORDAN.
The Story of the Innumerable Company.
PROFESSOR ARLEY B. SHOW. *The Saving that is by Sacrifice.*
THE REV. HUGH R. HAWEIS, A. M., London, Eng.
The Rationale of Prayer.
THE REV. J. HERNDON GARNETT, San Jose. *Immortality.*

MRS. SARAH B. COOPER, San Francisco. *Practical Christianity.*

THE REV. J. K. MCLEAN, D. D., Oakland. *Bread of Life.*

THE REV. E. R. DILLE, D. D., San Francisco.
The Building of a Man.

THE REV. E. J. DUPUY, San Francisco. *Shamefaced Christians.*

THE REV. ARTHUR B. SMITH, Oakland.
The Healing of the Nations.

THE REV. ROBERT MACKENZIE, D. D., San Francisco.
The Parable of the Sower.

THE REV. J. W. DINSMORE, San Jose.
God's Thoughts and Man's Thoughts.

RABBI JACOB VOORSANGER, San Francisco.
The Basic Elements of a Common Faith.

UNIVERSITY ASSOCIATIONS.

PHILOLOGICAL ASSOCIATION.

PROF. E. M. PEASE, President. DR. J. E. MATZKE, Secretary.

The University Philological Association was organized September 17, 1892, for the purpose of reading and discussing the results of investigations in language and literature. The membership consists of the instructors and advanced students in the different language departments of the University. The regular time of meeting is the last Thursday of each academic month, at 2 P. M. During the past year the following papers were presented:

April 26, 1894.
MR. C. M. POOR: Shakspere in Germany in the Storm and Stress Period.
MR. H. G. RENDTORFF: The M. H. G. poet Suchensinn.

May 24.
MR. W. E. JENKINS: The dramatic monologue of Browning.
PROF. E. FLÜGEL: Notes on Anglo-Saxon palaeography.

Sept. 27.
PROF. J. E. MATZKE: The development in French of Latin tonic ŏ in free syllables.

Oct. 25.
PROF. W. S. SYMINGTON: The Folklore of May-day in France.

Nov. 22.

Prof. E. Flügel: (1) The first Stanford University; (2) A note on Harrington's Treatise on Playe.

Prof. H. B. Lathrop: Some customs of the Inns of Court.

Dec 20.

Prof. A. T. Murray: The citizenship of Aristophanes.

Prof. E. M. Pease: A note on Cicero, ad Fam. XV, 16, 1.

Jan. 31, 1895.

Prof. W. H. Hudson: Studies on Keats.

Prof. J. E. Matzke: An unpublished O. Fr. version of Laws attributed to William the Conqueror.

Feb. 28

Prof. W. Miller: Pausanias and his guide-book.

March 21.

Prof. E. M. Pease: The greeting in Cicero's correspondence.

Prof. E. Flügel: Skeat's edition of Chaucer.

SCIENCE ASSOCIATION.

The following papers were read at the meetings of the University Science Association during the year from April, 1894, to April, 1895:

Professor Charles H. Gilbert.

The Problem of the Geographical Distribution of Fresh Water Fishes.

Professor Stewart W. Young.

Theories Concerning the Cause of Activity in Carbon Compounds.

Professor Frank Angell.

1. *The Perception of Distance.*
2. *The Psychology of Magic.*

Professor John C. Branner.

Concerning the U. S. Coast and Geodetic Survey.

Professor Oliver P. Jenkins.

Present Conceptions of the Contents of the Cell.

Professor George M. Richardson.

1. *The Space Relations of the Atoms within the Molecule.*
2. *The New Element Argon.*

President David S. Jordan.

The Roblar Man from the Miocene.

PROFESSOR EARL BARNES.

The Development of the Special Psychology of Childhood.

PROFESSOR JAMES P. SMITH.

The Age of the Auriferous Slates of the Sierra Nevada.

PROFESSOR FERNANDO SANFORD.

A New Magnetic Phenomenon.

PROFESSOR VERNON L. KELLOGG.

A Study in Specialization.

PROFESSOR THOMAS D. WOOD.

The Adaptation of the Human Organization to Modern Life.

PROFESSOR WILLIAM R. DUDLEY.

The Geographical Distribution of Plants Having Filamentous Pollen.

PROFESSOR WILLIAM J. HUSSEY.

The Atmosphere of Mars.

PROFESSOR DOUGLAS H. CAMPBELL.

The Relationships of the Pteridophytes.

MR. HERMAN D. STEARNS.

The Radius of Gyration.

PROFESSOR JOHN M. STILLMAN.

Ammonia Compounds with Metalic Chlorides.

THE HOPKINS LABORATORY.

Professors JENKINS and GILBERT, Directors.

The Hopkins Seaside Laboratory, founded by the liberality of Mr. Timothy Hopkins, of San Francisco, has been established as a branch of the biological work of the University, and holds its sessions during the summer months. The buildings are located at Pacific Grove, two miles west of Monterey, and stand on a low bluff immediately facing the sea. They consist of two two-story structures capable of accommodating about eighty students, and contain four general laboratories, one lecture room, and six private rooms for special investigators. They are provided with aquaria and running water, and all necessary facilities for biological study. The library and apparatus of the University are available for use in the laboratory. During the present year the Biological library has received a large number of valuable additions.

The Laboratory makes provision for three class of students:

1. Students in the Zoological, Physiological, and Botanical Departments of the University who wish to supplement their studies with work on living marine organisms under the favorable conditions of such a station.
2. Investigators who are prepared to make researches in marine biology, for which the Pacific Coast with its almost unworked field offers exceptional attractions.
3. Teachers or others who desire to become acquainted with marine animals and plants, and to learn the practical methods of their study.

SESSION OF 1894.

The third session of the Laboratory was held during the summer of 1894, beginning June 12th.

The instruction was given by Professor Jenkins, Assistant Professors McFarland and Price, and Instructors Greene and Shaw.

The following were in attendance:

Evelyn Briggs, student in Physiology, University.
Stewart D. Briggs, A. M., teacher in High School, Niles.
Minnie E. Blake, teacher in High School, Healdsburg.
C. H. Boxmeyer, student in Physiology, University.
Annie W. Brewer, teacher in High School, San Diego.
Horace Campbell, student in Physiology, University.
Anita Casey, teacher in Public Schools, Santa Rosa.
Angelina Chambaud, teacher in High School, Santa Rosa.
E. M. Cox, teacher in Public Schools, Santa Rosa.
George C. Culver, student in Zoology, University.
Charles A. Fife, A. B., Chemistry, University.
Ellen C. Gaines, teacher in Public Schools, Suisun.
Agnes E. Howe, student in Botany, University.
Minnie Howe, teacher in High School, Des Moines, Ia.
Lillian A. Howard, teacher in High School, Santa Cruz.
Ernest B. Hoag, B. S., student in Physiology, University.
Flora Hartley, student in Zoology, University.
Harold Heath, A. B., instructor in Histology, University.
Clark W. Hetherington, student in Education, University.
Mary E. Keating, teacher in Public Schools, San Francisco.
Clara P. Kellogg, student in Physiology, University.
Hugo A. Kiefer, A. B., Physiology, University.
Leverett M. Loomis, Curator of Mammals, California Academy of Sciences.
Annie Lyle, student in Physiology, University.

F. Lillian Matson, student in Physiology, University.
Mary K. Maxwell, student in Physiology, University.
Frances L. O'Meara, teacher in Public Schools, Santa Rosa.
C. Millacent Palmer, student in Economics, University.
Mrs. M. S. Pickett, teacher in Public Schools, Santa Rosa.
Adelaide Pollock, teacher in Public Schools, Seattle, Wash.
Edward L. Reichenbach, student in Physiology, University.
Stella Rose, student in Physical Training, University.
De Alton Saunders, instructor in Botany, University of Nebraska.
Miss Schlegel, teacher in Public Schools, Seattle, Wash.
Norman B. Scofield, student in Zoology, University.
Alvin Seale, student in Zoology, University.
G. L. Seward, student in Physiology, University.
Elsie H. Shelley, A. B., Physiology, University.
F. I. Shepherd, student in Chemistry, University.
W. F. Snow, student in Chemistry, University.
E. C. Starks, student in Zoology, University.
Clara Stoltenberg, student in Education, University.
G. B. Taylor, student in Physiology, University.
Laura A. Trumbo, student in Physiology, University.
Christie E. Warden, student in English, University.
Ida C. Whittier, student in English, University.
T. M. Williams, student in Physiology, University.
H. T. Woodward, student in Physiology, University.
Margaret Wythe, teacher in High School, Oakland.

SESSION OF 1895.

The session for 1895 will begin Monday, June 17th, the regular course of instruction continuing until July 29th. Investigators or advanced students may arrange to continue their work for a longer period. A circular containing detailed information concerning the work of the Laboratory may be had on application to the Registrar or to the Directors.

Fees.—To investigators, the facilities of the Laboratory are offered free. Students in the University who have taken the elementary courses in Zoology, Physiology, or Botany, will pay a fee of fifteen dollars to cover necessary expenses. All others will be charged a fee of twenty-five dollars.

SUMMER COURSES.

Beginning June 3, 1895, Summer Courses of instruction will be given at the University as outlined below.

These courses will be open to regularly matriculated students of the University, to teachers, and to others qualified to undertake the work. As noted in the statements below under the several departments, a number of the courses are offered for the special benefit of teachers.

The following regulations apply to regularly matriculated students of the University.

1. Courses in the Summer School may receive the same credit as the same amount and kind of University work. For this purpose the eight weeks' Summer School shall be considered the equivalent of half a semester; courses running through a whole semester and counting two, four, and six hours, will, therefore, in the Summer School, be credited one, two, and three hours respectively. But no student shall receive more than eight hours University credit in any summer session.

2. Credit toward graduation will be given only for courses which have been approved by the professor or professors in the department concerned.

A record of the non-matriculated students in attendance on summer courses will be filed with the Registrar, with such reports as may be of value for future reference.

Fees for summer courses vary from five to thirty-five dollars per course, according to the amount and nature of the work. For these and other details, including a full description of courses offered, see the special circular of the Summer School, which may be had on application to the Registrar, Stanford University, Cal.

GREEK.

Professor MURRAY.

1. **Greek Literature.** *3 hrs., 8 weeks.* (MURRAY.)

A study of some of the masterpieces of Greek Literature in translation, accompanied by lectures.

2. **Homer.** *3 hrs., 8 weeks.* (MURRAY.)

A course in rapid reading.

3. **Thucydides.** *3 hrs., 8 weeks,* (MURRAY.)

Preparatory to the work of the Greek Seminary for 1895-96.

LATIN.

Associate Professor FAIRCLOUGH, Assistant KIRTLAND, and MR. ELMORE.

1. **Beginners' Course.** *5 hrs., 6 weeks.* (KIRTLAND.)
Intended for teachers who have had no opportunity for taking up the language and for students preparing for entrance to the University.

2. **Cæsar and Cicero.** *5 hrs., 6 weeks.* (KIRTLAND.)
Primarily for those who wish to present Elementary Latin (20) for admission to the University, and for teachers who desire assistance in this work.

3. **Vergil.** *5 hrs., 6 weeks.* (FAIRCLOUGH, ELMORE.)
Intended partly for teachers who have Vergil in their school work, and partly for students who desire to complete the work in Advanced Latin (21) for entrance credit.

4. **Terence, Adelphœ; Nepos, Lives.** *5 hrs., 6 weeks.* (FAIRCLOUGH.)

GERMAN.

Professor GOEBEL, and Instructor RENDTORFF.

1. **Elementary German.** *4 hrs., 8 weeks.* (RENDTORFF.)
Grammar and easy reading.

2. **German Conversation and Rapid Reading.** *2 hrs., 8 weeks.* (RENDTORFF.)

3. **Scientific German.** *2 hrs., 8 weeks.* (RENDTORFF)
Reading of scientific German prose.

4. **History of German Literature in the Nineteenth Century.** *2 hrs., 8 weeks.* (GOEBEL.)

5. **Teachers' Seminary.** *2 hrs., 8 weeks.* (GOEBEL.)

FRENCH.]

Assistant Professor BRUN.

1. **Elementay French.** *5 hrs., 8 weeks.* (BRUN.)

2. **Modern French.** *5 hrs., 8 weeks.* (BRUN.)

Course 1 is intended for students who already having had some French wish to prepare for entrance examination in September.

Course 2 is intended for students or others who may expect to acquire a better reading knowledge of French.

ENGLISH.

Professors FLÜGEL and HUDSON, Associate Professor LATHROP, and Instructor HARDY.

1. **Historical Grammar of the English Language.** *5 hrs., 4 weeks.* (FLÜGEL.)

From the Anglo-Saxon period to Caxton.

2. **Introduction to the Study of Chaucer.** *5 hrs., 4 weeks.* (FLÜGEL.)

3. **History of Early English Literature.** *5 hrs., 4 weeks.* (FLÜGEL.)

From the Anglo-Saxon period to Chaucer.

4. **English Poetry of the Nineteenth Century.** *5 hrs., 6 weeks.* (HUDSON.)

5. **The English Novel.** *5 hrs., 6 weeks.* (LATHROP.)

6. **English Composition.** *5 hrs., 6 weeks.* (HARDY.)

A course of twenty-four lectures on English composition, with six weeks' practice, in writing under criticism.

7. **Teachers' Course in Composition.** *5 hrs., 6 weeks.* (HARDY.)

A course of twenty-four lectures on Teaching Composition, with six weeks' practice in writing under criticism.

ECONOMICS.

Instructor JENNESS.

1. **Elements of Economics.** *5 hrs., 6 weeks.* (JENNESS.)

2. **Advanced Course.** *5 hrs., 6 weeks.* (JENNESS.)

MATHEMATICS.

Professor GREEN and Instructor COX.

1. **Theory of Arithmetic.** *3 hrs., 6 weeks.* (GREEN.)

A course for teachers. A knowledge of the elements of Algebra is presupposed.

2. **Theory of Elementary Algebra.** *5 hrs., 6 weeks.* (GREEN.)

A course for teachers.

3. **Elementary Algebra.** *5 hrs., 6 or 8 weeks.* (GREEN.)

4. **Plane Geometry.** *5 hrs., 8 weeks.* (COX.)

5. **Solid Geometry.** *5 hrs., 8 weeks.* (COX.)

A course of equal extent with that given in the University.

6. **Elementary Trigonometry.** *5 hrs., 8 weeks.* (Cox.)

7. **Conic Sections.** *5 hrs., 8 weeks.* (Cox.)

Courses 3 and 4 are arranged to aid those who are preparing to pass the entrance examinations in algebra and geometry.

CHEMISTRY.

Assistant Professor YOUNG, Instructor MYERS, and MR. ADAMS.

1. **Elementary Chemistry.**

This course will be practically the same as is given in the first year in the University. It is estimated that the student devoting ten periods of three hours each per week to this course will be able to complete the course.

2. **Qualitative Analysis.** *8 periods, 8 weeks.*

Laboratory and lectures open to students who have performed work equivalent to course 1.

3. **Quantitative Analysis.** *6 to 10 periods, 8 weeks.*

4. **Organic Preparations.** *6 periods, 8 weeks.*

5. **Partial Courses.** *5 periods, 8 weeks.*

Students not wishing to devote time sufficient for the completion of course 1 may take one-half the laboratory course.

HYGIENE AND ORGANIC TRAINING.

Professor WOOD, Instructor MOSHER, and Assistant MARCH.

The instruction in this department will begin June 17th and continue until July 27th.

The instruction is designed for those who desire special training in personal Hygiene and Organic Training for their own benefit and better preparation for educational work. Special courses of instruction will be arranged, as satisfactorily as possible, for those who may be able to attend only a part of the six weeks.

1. **Personal and School Hygiene** *4 hrs., 6 weeks.*

2. **Organic Education and Anthropometry.** *4 hrs., 6 weeks.*

3. **Practical Organic Training.** *5 to 10 hrs., 6 weeks.*

BOTANY, PHYSIOLOGY, ZOOLOGY.

[See under Hopkins Laboratory, p. 124.]

CIVIL ENGINEERING.

Assistant Professor Fish.

1. **Linear Drawing and Lettering.** *6 hrs., 8 weeks.* (Fish.)
2. **Descriptive Geometry.** *6 hrs., 8 weeks.* (Fish.)
3. **Descriptive Geometry.** *2 hrs., 8 weeks.* (Fish.)
4. **Topographical Projections.** *9 hrs., 8 weeks.* (Fish.)

ELECTRICAL ENGINEERING.

Assistant Farmer.

1. **Elementary Electrical Measurements.** *3 hrs., 8 weeks.* (Farmer.)
2. **Electrical Testing.** *3 hrs., 8 weeks.* (Farmer.)

Special arrangements may be made with the instructor for an extension of these courses by students willing to devote extra time.

SHORTHAND AND TYPEWRITING.

Mr. G. A. Clark.

1. **Shorthand and Typewriting.** *4 hrs., 6 or 12 weeks.* (Clark.)

PROFESSOR EARL BARNES.
The Development of the Special Psychology of Childhood.
PROFESSOR JAMES P. SMITH.
The Age of the Auriferous Slates of the Sierra Nevada.
PROFESSOR FERNANDO SANFORD.
A New Magnetic Phenomenon.
PROFESSOR VERNON L. KELLOGG.
A Study in Specialization.
PROFESSOR THOMAS D. WOOD.
The Adaptation of the Human Organization to Modern Life.
PROFESSOR WILLIAM R. DUDLEY.
The Geographical Distribution of Plants Having Filamentous Pollen.
PROFESSOR WILLIAM J. HUSSEY.
The Atmosphere of Mars.
PROFESSOR DOUGLAS H. CAMPBELL.
The Relationships of the Pteridophytes.
MR. HERMAN D. STEARNS.
The Radius of Gyration.
PROFESSOR JOHN M. STILLMAN.
Ammonia Compounds with Metalic Chlorides.

THE HOPKINS LABORATORY.

Professors JENKINS and GILBERT, Directors.

The Hopkins Seaside Laboratory, founded by the liberality of Mr. Timothy Hopkins, of San Francisco, has been established as a branch of the biological work of the University, and holds its sessions during the summer months. The buildings are located at Pacific Grove, two miles west of Monterey, and stand on a low bluff immediately facing the sea. They consist of two two-story structures capable of accommodating about eighty students, and contain four general laboratories, one lecture room, and six private rooms for special investigators. They are provided with aquaria and running water, and all necessary facilities for biological study. The library and apparatus of the University are available for use in the laboratory. During the present year the Biological library has received a large number of valuable additions.

The Laboratory makes provision for three class of students:

1. Students in the Zoological, Physiological, and Botanical Departments of the University who wish to supplement their studies with work on living marine organisms under the favorable conditions of such a station.

2. Investigators who are prepared to make researches in marine biology, for which the Pacific Coast with its almost unworked field offers exceptional attractions.

3. Teachers or others who desire to become acquainted with marine animals and plants, and to learn the practical methods of their study.

SESSION OF 1894.

The third session of the Laboratory was held during the summer of 1894, beginning June 12th.

The instruction was given by Professor Jenkins, Assistant Professors McFarland and Price, and Instructors Greene and Shaw.

The following were in attendance:

Evelyn Briggs, student in Physiology, University.
Stewart D. Briggs, A. M., teacher in High School, Niles.
Minnie E. Blake, teacher in High School, Healdsburg.
C. H. Boxmeyer, student in Physiology, University.
Annie W. Brewer, teacher in High School, San Diego.
Horace Campbell, student in Physiology, University.
Anita Casey, teacher in Public Schools, Santa Rosa.
Angelina Chambaud, teacher in High School, Santa Rosa.
E. M. Cox, teacher in Public Schools, Santa Rosa.
George C. Culver, student in Zoology, University.
Charles A. Fife, A. B., Chemistry, University.
Ellen C. Gaines, teacher in Public Schools, Suisun.
Agnes E. Howe, student in Botany, University.
Minnie Howe, teacher in High School, Des Moines, Ia.
Lillian A. Howard, teacher in High School, Santa Cruz.
Ernest B. Hoag, B. S., student in Physiology, University.
Flora Hartley, student in Zoology, University.
Harold Heath, A. B., instructor in Histology, University.
Clark W. Hetherington, student in Education, University.
Mary E. Keating, teacher in Public Schools, San Francisco.
Clara P. Kellogg, student in Physiology, University.
Hugo A. Kiefer, A. B., Physiology, University.
Leverett M. Loomis, Curator of Mammals, California Academy of Sciences.
Annie Lyle, student in Physiology, University.

Bishop, George Wells,	*San Jose,*	Economics
Bishop, Herbert Fiske,	*Fairmont,*	Physiology
Black, Marshall,	*Lewis Centre, O.,*	Law
Blake, Marguerite May,	*San Francisco,*	Physiology
Blake, William Ford,	*Santa Clara,*	Physiology
Bland, Henry Meade,	*College Park,*	English
Ph. B., Univ. of the Pacific, 1887; Ph. D., 1890.		
Bledsoe, Benjamin Franklin,	*San Bernardino,*	History
Blichfeldt, Hans Frederick,	*Palo Alto,*	Mathematics
Bloom, Mollie Saidee,	*San Jose,*	Mathematics
Boardman, Elizabeth Louise,	*Menlo Park,*	Latin,
A. B., Stanford, 1893.		
Bolton, Florence,	*Berkeley,*	Hygiene *Sp.*
Bordè Cèline,	*San Jose,*	Education
Bowman, Elsie,	*San Francisco,*	Latin
Bowman, Frances Agnes,	*San Francisco,*	Botany
Boxmeyer, Charles Herbert,	*Holden, Mo.,*	Physiology
Boyd, Edith L.,	*Spokane, Wash.,*	English
Boyd, John Duncan,	*Riverside,*	Electrical Eng.
Braly, Bertha Hyde,	*Palo Alto,*	German
Brandt, Gerhard Johan Gilles, Jr.	*Calistoga,*	Electrical Eng.
Brant, Allan,	*Palo Alto,*	Law *Sp.*
Breese, Llywelyn, Jr.,	*Portage, Wis.,*	Physiology
Brewer, Adaline Whipple,	*San Mateo,*	English *Sp.*
Brewer, De Witt Clinton,	*Binghampton, N. Y.,*	Physics
Briggs, Evelyn,	*Sacramento,*	Physiology
Briggs, William Dinsmore	*Sacramento,*	English
Brim, Lucie May,	*Williams,*	Physiology
Bristol, Susan Brown,	*Palo Alto,*	English
Bronco, William Carl,	*Tacoma, Wash.,*	Law
Brooks, George Sanford,	*Hedrick, Ia.,*	German
Brown, Anna May,	*Washington, D. C.,*	Education
Brown, David Ewald,	*Oakland,*	Civil Eng.
Brown, Frederick Melvin,	*Brooklyn, N. Y.,*	Electrical Eng.
A. B., Harvard Univ., 1889.		
Brown, Florence Villiers,	*San Jose,*	English
Brown, Gertrude North,	*Burdett, N. Y.,*	Education *Sp.*
Brown, Hugh Henry,	*Steubenville, O.,*	Law
Brown, Lena Josephine,	*San Bernardino,,*	English
Brown, Will Lear,	*South Riverside,*	Civil Eng.
Brown, Walter Shirlaw,	*Stockton,*	Phosiology
Brown, Zaidee Mabel,	*Burdett, N. Y.,*	Physiology

Bryan, Ella Ethel,	*Carthage, Mo.,*	**English *Sp.***
Bryan, Edgar James,	*Portland, Or.,*	**Civil Eng.**
Buchanan, Bertha,	*Santa Cruz,*	**English**
Buck, Rufus,	*Seattle, Wash.,*	**Mining Eng.**
Bullock, Bertram Nathaniel,	*Eureka,*	**History**
Bullock, Newell Harris,	*Pleasant Grove, Utah,*	**Education *Sp.***
Bumiller, Arthur William,	*Los Angeles,*	**Mathematics**
Bunker, Charles Emmons,	*Newman*	**Mechanical Eng.**
Burch, Lily Virginia,	*Washington, D. C.,*	**Physiology *Sp.***
Burcham, Fleming Isaiah,	*Salem, Or.,*	**History**
Burcham, James Taylor,	*Salem, Or.,*	**History**
Burke, Mary,	*Santa Cruz,*	**English**
Burnell, Charles Sumner Smith,	*San Francisco,*	**Economics**
Burnett, Arthur Hardin,	*Tulare,*	**Electrical Eng.**
Burnham, Stewart Henry,	*Vaughns, N. Y.,*	**Botany**
Busch, George Henry,	*Butte, Mont.,*	**History**
Bush, George William,	*Redding,*	**Law**
Butler, Charles Edgar,	*Palo Alto,*	**Electrical Eng.**
A. B., Harvard Univ., 1890.		
Butler, Isabelle,	*Palo Alto,*	**Drawing *Sp.***
Buxton, Norman Geer,	*Johnstown, O.,*	**Zoology**
Byxbee, Blanche Beatrice,	*Palo Alto,*	**English**
Byxbee, Ella Frances,	*Palo Alto,*	**Chemistry**
Caldwell, Clara Winifred,	*Pasadena,*	**Mathematics**
Calhoun, Scott,	*La Conner, Wash.,*	**History**
Campbell, Horace,	*College Park,*	**Physiology**
Campbell, Pauline Beth,	*Palo Alto,*	**Chemistry *Sp.***
Campbell, Robert Willis,	*San Francisco,*	**History**
Campbell, William Evan,	*College Park,*	**History**
Camper, Charles Henry,	*Chico,*	**History**
Carle, Nathaniel Allen,	*Seattle, Wash.,*	**Mechanical Eng.**
Carter, Frank Marvin,	*Irvington,*	**Physiology**
Carter, Maggie Shaw,	*Sacramento,*	**Education**
Carter, Thomas Newton,	*Irvington,*	**Electrical Eng. *Sp.***
Carver, Helen Ashley,	*St. Paul, Minn.,*	**History**
Case, Martha Shattuck,	*San Francisco,*	**Physiology *Sp.***
Cathcart, Arthur Martin,	*Colorado Springs, Col.,*	**History**
Chadwick, Blanche,	*Salt Lake City, Utah,*	**Education *Sp.***
Champion, Louis Frederick,	*Oakland,*	**Civil Eng.**
Chapin, John Endicott,	*San Jose,*	**Chemistry**
Chapman, Bertha Louise,	*Oakland,*	**English**
Chapman, Elizabeth,	*Oakland,*	**English**

Charles, Mable Rankin,	*Palo Alto,*	Physiology
Charles, Samuel Watson,	*Palo Alto,*	Law
Clark, Arthur Bridgman,	*Mayfield,*	Drawing
B. Ar., Syracuse Univ., 1888; M. Ar., 1891.		
Clark, George Archibald,	*Palo Alto,*	Latin
B. L., Univ. of Minnesota, 1891.		
Clark, Grace Birge,	*Mayfield,*	Drawing *Sp.*
Clark, Grace Eleanor,	*San Jose,*	Physiology
Clark, James William,	*Cedar Rapids, Ia.,*	Law
Clark, Vivian Verd,	*Socorro, N. M.,*	Chemistry *Sp.*
Clark, Walter,	*Eden Prairie, Minn.,*	Greek *Sp.*
Clark, Wellyn Brayton,	*Palo Alto,*	Mathematics
A. B., Stanford, 1893.		
Clayton, Edgar Oscar,	*Vacaville,*	Economics
Cleaveland, Newton,	*Biggs,*	Physiology *Sp.*
Cochran, Guy Hunt,	*Los Angeles,*	English
Code, Thomas K.,	*San Francisco,*	Mining Eng.
Coffin, Bessie Rachel,	*Boulder, Col.,*	Latin
Collier, William Armistead, Jr.,	*Memphis, Tenn.,*	Ethics
Collins, Richard Everett, Jr.,	*San Jose,*	Chemistry *Sp.*
Collins, Samuel Wilson,	*Graham, Mo.,*	Physics
A. B., Stanford, 1895.		
Colliver, John Adams,	*San Bernardino,*	Physiology
Colt, Alice Maria,	*Santa Barbara,*	English
Comstock, Sarah,	*Kansas City, Mo.,*	English
Condit, Benson Clare,	*Riverside,*	Electrical Eng.
Condit, Clyde Ernest,	*Ironton, O.,*	Electrical Eng.
Conn, Frances Sophia,	*Fresno,*	Education
Conneau, William Albert,	*Modesto,*	Law
Conners, George Wilbert,	*Santa Rosa,*	Civil Eng.
Connick, Harris De Haven	*Eureka,*	Civil Eng.
Connon, George William,	*Aberdeen, Scotland,*	Mech. Eng. *Sp.*
*Cooke, Allyn Heald,	*Salem, Or.,*	Chemistry
A. B., Willamette Univ., 1890.		
Coolidge, Daniel,	*Riverside,*	English
Coombs, Mabel,	*Marysville,*	French
Cooper, John Hill,	*Campbell,*	Physiology *Sp.*
Cope, Harry,	*Santa Cruz,*	Law
Copeland, Edwin Bingham,	*Monroe, Wis.,*	Botany
Copeland, Harold Townsend,	*Salem, Or.,*	Electrical Eng.
Copeland, Lewis Dugan,	*San Jacinto,*	Law
Corbert, Anita Lawrence,	*Palo Alto,*	Economics

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*Work completed, Summer School, 1894.

Corbin, Elisha Lockhart,	*Union, Or.,*	Law *Sp.*
Corneille, Leon Albert,	*San Jose,*	Electrical Eng. *Sp.*
Cory, Harriet,	*San Jose,*	English
Cory, Henry Manning,	*Fresno,*	Chemistry
Cory, Mabel Hyde,	*Fresno,*	History
Cory, Susanna,	*San Jose,*	English
Cotton, Steuart Walker,	*San Francisco,*	History
Coulter, Minnie,	*Santa Rosa,*	Education
Cowen, Alice Isabel,	*San Francisco,*	German
Cox, Charles Ellwood, A. B., Haverford Coll., 1880; A. M,. Stanford, 1893.	*College Park,*	Mathematics
Cox, Herbert Every, Ph. B., Univ. of the Pacific, 1882.	*Santa Cruz,*	Education
Cox, Lydia Shipley Bean, A. B., Penn College., 1881.	*College Park,*	English
Cragin, Alice Elizabeth,	*San Jose,*	Latin
Cram, Charles Maurice,	*Mt. Vernon, Me.,*	English
Cramer, Frank, B. L., Lawrence Univ., 1886; A. M., Stanford, 1893.	*Palo Alto,*	Zoology
Crane, Catherine McAlpine,	*Laurel,*	English
Crawford, Orion James,	*Vancouver, Wash.,*	Electrical Eng.
Critchlow, May Uintah,	*Salt Lake City, Utah,*	German
Crocker, Harry Bosworth,	*Geyserville,*	Physiology
Cross, Robert Patterson,	*Chicago, Ill.,*	Economics
Crothers, George Edward,	*San Jose,*	History
Crow, Evelyn Gladys,	*San Jose,*	English
Crow, Will Henry,	*Redwood City,*	Law
Crowell, Carlena,	*San Francisco,*	Romanic Lang.
Crowell, Robinson,	*San Francisco,*	Electrical Eng.
Crutchfield, Charles,	*Alexandria, Tenn.,*	English
Cullinan, Joseph Patrick,	*Santa Cruz,*	History
Culver, George Bliss,	*Palo Alto,*	Zoology
Culver, Julia Louise,	*Palo Alto,*	English
Culver, Paul Drury,	*Palo Alto,*	Economics *Sp.*
Culver, Richard Keith,	*Palo Alto,*	Drawing
Cummings, Minnie Ada, B. S,. Olivet Coll., 1890.	*Houghton, S. D.,*	Physiology
Curtis, Albert Roscol,	*Santa Clara,*	Law *Sp.*
Curtner, Albert Howard,	*Warm Springs,*	Electrical Eng.
Cushman, Florence,	*San Jose,*	English
Cyrus, Rachel Elizabeth,	*Calistoga,*	Drawing *Sp.*
Dalton, William Linnett,	*Portland, Or.,*	Mechanical Eng. *Sp.*
Daly, Kathryn Helen,	*Santa Clara,*	English *Sp.*

Daniels, Clyde Lorin,	*Riverside,*	Economics
Darling, Ernest Wilfred,	*Portland, Or.,*	Ethics *Sp.*
Darrah, Estelle M.,	*St. Paul, Minn.,*	Education
Dart, Elbert Ripley,	*Rock Island, Ill.,*	Civil Eng.
Dart, Roderick Samnis,	*Rock Island, Ill.,*	Law
Davidson, Percy Erwin,	*San Diego,*	Education
Davies, Rees O.,	*Neath, Pa.,*	Law
Davis, Arthur Eugene,	*San Francisco,*	Civil Eng.
Davis, Everett Leroy,	*San Jose,*	History
Davis, Grace,	*Carson, Nev.,*	Drawing
Deasy, Michael,	*Mendocino,*	History
Decker, Charles Gordon,	*Redlands,*	Law *Sp.*
De Cou, Le Berta Everett,	*Omaha, Neb.,*	English *Sp.*
De Haven, Lucie Gates,	*Mountain View,*	Physiology
De Laguna, Bertha,	*Oakland,*	Latin
A. B., Stanford, 1894.		
Deming, Daisy,	*Sacramento,*	English
Dempsey, John Henry, Jr.,	*Los Angeles,*	English *Sp.*
Desimone, Joseph Antony,	*San Jose,*	History *Sp.*
Deuel, Harry Austin,	*Denver, Col.,*	Mechanical Eng. *Sp.*
DeVoe, Howard Christopher,	*Wausau, Wis.,*	Mathematics
De Wolfe, Herbert Nash,	*Tacoma, Wash.,*	Law
Dibble, Nellie Maria,	*Dakota City, Neb.,*	History
Dicks, John William Duncan,	*Natchez, Miss.,*	Civil Eng. *Sp.*
Dickson, Susie May,	*Truro, N. S.,*	Zoology
Diehl, Christopher B.,	*Salt Lake City, Utah,*	Law *Sp.*
Diggles, James Arthur,	*Ft. Jones,*	Mining Eng.
Dillon, Arthur Orison,	*Puyallup, Wash.,*	History *Sp.*
Dixon, Anna E.,	*Palo Alto,*	History *Sp.*
Dixon, Joseph,	*Townsend, Mont.,*	Mechanical Eng.
Doane, Rennie Wilbur,	*Pasadena,*	Entomology
Dodson, George Rowland,	*Alameda,*	Psychology
A. B., Univ. of Missouri, 1887.		
Dodson, Shelby Martinèau,	*Santa Clara,*	Economics
Doerr, Louis,	*San Jose,*	German
Doherty, William,	*Paterson, N. J.,*	Law
Dole, Charles Sumner,	*Riverside,*	Economics
Dole, Marion Foster,	*Riverside,*	Physiology
Donald, Robert L'Amy	*San Francisco,*	Civil Eng.
Dorsey, Florence Eugenia,	*San Francisco,*	Entomology *Sp.*
Doty, Frank Carlton,	*Palo Alto,*	History
Doub, William Coligny,	*Ottawa, Kan.,*	History

Doud, Daisy Annette,	*San Francisco,*	Latin
Downing, Claude Standish,	*Palo Alto,*	Civil Eng.
Downing, Paul Milton,	*Palo Alto,*	Electrical Eng.
Doyle, Edmund Miller,	*Menlo Park,*	Mechanical Eng.
Drake, Noah Fields,	*Cincinnati, Ark.,*	Geology
C. E., Arkansas Industrial Univ., 1888; A. B., Stanford, 1894.		
Dray, Frank Raymond,	*Sacramento,*	Chemistry
A. B., Stanford, 1895.		
Ducker, Edith Virginia,	*Mayfield,*	German
Ducker, Lena Mary,	*Mayfield,*	German
Dulley, Charles John,	*São Paulo, Brazil,*	Mechanical Eng.
Dulley, Frederick Louis,	*São Paulo, Brazil,*	Greek
Dulley, Hetty Rudge,	*São Paulo, Brazil,*	Drawing *Sp.*
Dulley, Polly Beitler,	*São Paulo, Brazil,*	German *Sp.*
Duncan, Ruth Anna,	*Campbell's,*	English
Dunn, John Leander,	*Monmouth, Or.,*	Mathematics
A. B., Oskaloosa Coll., 1881; A. M., 1884.		
Durham, George Clark,	*Portland, Or.,*	Economics,
Durham, May Lemia,	*Springfield, Mo.,*	English
Durrell, Carleton Edgar,	*Pasadena,*	Chemical Eng.
Dyer, Hugh Thomas,	*Alvarado,*	Chemistry *Sp.*
Dyke, Charles John,	*Los Angeles,*	Economics
Eaton, Orrison Vert,	*Franklin, Ind.,*	Economics
Eaves, Harriet Rumsey,	*Eugene, Or.,*	Economics
Eberhard, Clara,	*Santa Clara,*	German
Eberhard, Emilie,	*Santa Clara,*	English
Edwards, Ada,	*Indianapolis, Ind.,*	Hygiene *Sp.*
Ellery, Nathaniel,	*Eureka,*	Civil Eng.
Ellingham, Georgia,	*Denver, Col.,*	German
***Ellis, Paul Shaffer,**	*San Francisco,*	Law
Elmore, Jefferson,	*Mayfield,*	Latin
A. B., Stanford, 1895.		
Elmore, Margaret Hilliard,	*Mayfield,*	Physics
Ely, Le Roy D.,	*Pasadena,*	English
Emerson, Grace May Bryant,	*Mountain View,*	English
Emery, Arthur Lowell,	*Ithaca, N. Y.,*	Chemistry
Entler, Frank Lamond,	*Chico,*	Electrical Eng.
Eustis, Carroll Francis,	*Portland, Me.,*	English
Ewell, Edwin Chapin,	*San Francisco,*	Law
Farmer, Elmer Elsworth,	*Palo Alto,*	Electrical Eng.
Farmer, Edward Lewis,	*Santa Cruz,*	Law

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*Deceased, Dec. 28, 1894.

Fay, Alexandra,	*Anaheim*,	Drawing
Ferguson, Agnes Eva,	*Stockton*,	Latin
Fickert, Charles Marron,	*Tehachipi*,	History *Sp.*
Field, Charles Kellogg,	*Alameda*,	English
Field, Joel Yancy,	*Dallas*, *Tex.*,	Economics
Fielder, Ortha Belle,	*Dansville*, *N. Y.*,	History
Fife, Joseph Paull,	*Pasadena*,	Economics
Fisher, Forrest Starkey,	*The Dalles*, *Or.*,	Law *Sp.*
Fisher, Leroy,	*Altavista*, *Mo.*,	Law *Sp.*
Fitzgerald, James Joseph,	*Stockton*,	Latin
Fleming, Charles Sumner,	*Phœnix*, *Ariz.*,	Electrical Eng. *Sp.*
Flint, Maude,	*Mayfield*,	English
Fogg, Fred Seydel,	*Tacoma*, *Wash.*,	German
Fogg, Horace,	*Tacoma*, *Wash.*,	History
Folsom, Myron Arlie,	*Eden Vale*,	Law
Fong, Walter Ngon,	*Quong Tong*, *China*,	Economics
Ford, Cornelia P.,	*Palo Alto*,	Botany
Ford, Georgiana Bishop,	*Palo Alto*,	English
Forrest, Melva Naomi,	*Chehalis*, *Wash.*,	History *Sp.*
Foss, Ashley Francis,	*Chicago*, *Ill.*,	Law
Foster, Benjamin Oliver,	*Washington*, *D. C.*,	Latin
Foster, Margaret,	*Washington*, *D. C.*,	Greek
Foulkes, Edward,	*Portland*, *Or.*,	Architecture
Fowler, Una Eugenia,	*Los Angeles*,	English
Foy, Charles William,	*San Bernardino*,	Economics
Francis, George Horton,	*Napa*,	History
Frank, Miriam,	*Victoria*, *B. C.*,	English
Frankenheimer, Julius B.,	*Stockton*,	Chemistry
Fraser, Alfred Parker,	*Stockton*,	English
Fraser, James Casey,	*Stockton*,	History
Frazier, Charles Ronald,	*Portland*, *Or.*,	Chemistry
Freas, Thomas Bruce,	*Highwater*, *O.*,	Chemical Eng.
Freeman, Mary,	*Woodland*,	English
Frost, Everard Charles,	*Maryville*, *Mo.*,	Chemistry
Frost, Paul Rich,	*San Bernardino*,	Law *Sp.*
Fry, Donald Hume,	*Arcata*,	Mechanical Eng.
Fry, Winifred Sophie,	*Arcata*,	Physiology
Furbush, George Ernest,	*Palo Alto*,	English
Fyffe, Harriet J.,	*Normal*, *Ill.*,	English
Gale, Edward Nuckols,	*Santa Rosa*,	German
Galt, John Martin,	*Sterling*, *Ill.*,	History
Gamer, Albert Cylvester,	*San Jose*,	German *Sp.*

Garey, Walter Dunbar,	*San Jose,*	**Law** *Sp.*
Garfield, Raymond Sheldon,	*Napa,*	**Electrical Eng.**
Gates, John McPherson,	*Hillsboro, Or.,*	**Physiology**
Gates, Mae Eleanor,	*Anderson,*	**Mathematics** *Sp.*
Gauterau, Stanley Harry Treat,	*Palo Alto,*	**Ethics** *Sp.*
Gerichs, E. Louese,	*San Jose,*	**German**
Gibbs, Robert Adams,	*Ft. Ann, N. Y.,*	**Physiology**
Giblin, Anna Elizabeth,	*Oakland,*	**English**
Gibson, Gion Wakefield,	*Williams,*	**Civil Eng.**
Gifford, Pearl Vincent,	*Erie, Pa.,*	**History**
Gifford, William Pitt,	*Erie, Pa.,*	**Law**
Gillette, Benjamin Taswell,	*Los Angeles,*	**Chemistry**
Gilliam, Reuben Ferdinand,	*Columbia, S. C.,*	**Law**
Gillis, Sarah Cecelia,	*Mt. Pleasant, Ia.,*	**German** *Sp.*
Gilmore, Georgia Louise,	*Selma,*	**German**
Gilmore, Lucien Howard, A. B., Stanford, 1894.	*Palo Alto,*	**Physics**
Girty, George Herbert, A. B., Yale Univ., 1892; Ph. D., 1894.	*Cleveland, O.,*	**Geology**
Gould, Carl Porter,	*Pomona,*	**Civil Eng.**
Grabill, Clarence Alfred, A. B., Stanford, 1894.	*Red Oak, Ia.,*	**Chemistry**
Graham, William Alexander,	*Cedar Falls, Ia.,*	**Law**
Gray, Florence Templeton,	*Hinsdale, N. H.,*	**English**
Gray, Ida,	*Marysville,*	**Education**
Greeley, Arthur White,	*San Jose,*	**Zoology**
Green, Edward James,	*Jamestown, N. Y.,*	**History**
Green, George Sumner,	*Fletcher, Nev.,*	**Law** *Sp.*
Green, Lillian Pearle,	*Knightstown, Ind.,*	**English**
Green, Maude Agnes,	*San Jose,*	**English**
Greene, Charles Wilson, A. B., Stanford, 1892; A. M., 1893.	*Palo Alto,*	**Physiology**
Greenleaf, Charles Hunt,	*Chicago, Ill.,*	**Law** *Sp.*
Greenleaf, George Ravenscroft,	*Berkeley,*	**Electrical Eng.**
Greer, Laura Smith,	*Menlo Park,*	**Education**
Greer, Medorem William, B. S., Mass. Inst. of Technology, 1891.	*Menlo Park,*	**English**
Gregg, Paul Mills,	*San Luis Obispo,*	**Law**
Gregory, John Munford, Jr.,	*Suisun,*	**History**
Grieb, Maud Louisa,	*Arroyo Grande,*	**History**
Griffin, Jesse Richard,	*Oakdale,*	**Economics**
Griffith, Robert Blake,	*Council Bluffs, Ia.,*	**Law**
Griswold, May,	*Los Angeles,*	**Latin**

Grosh, Milton David,	*San Francisco,*	Mechanical Eng.
Grow, Edward Eugene,	*San Bernardino,*	Electrical Eng. *Sp.*
Gundersen, Alfred Ludvig Georg,	*Portland, Or.,*	Romanic Lang.
Gunn, Francis George,	*Kelseyville,*	Zoology *Sp.*
Gunn, James Alexander, Jr.,	*Kelseyville,*	English
Guppy, Christine Mary,	*San Jose,*	Latin
Guppy, Mabel F.,	*San Jose,*	Latin
Guth, William Westley,	*San Francisco,*	History
Gwartney, John George,	*Palo Alto,*	Mathematics
Haas, Charles Edmund,	*Los Angeles,*	Law
Hadley, Frederick Harlan, A. B., Stanford, 1894.	*Tulare,*	Education
Hadley, Grace Talbot,	*Salt Lake City Utah,*	English, *Sp.*
Haffey, James Lee Roy,	*Highlands, Col.,*	Law
Hall, Albert Ludwig,	*Pasadena,*	English
Hall, Myron Dorman,	*Palo Alto,*	Chemistry
Hall, Sarah Addalette, A. B., Univ. of the Pacific, 1884; A. M., 1887.	*Palo Alto,*	History
Hamilton, Ernest G.,	*Riverside,*	Civil Eng.
Hamilton, Parnie O.,	*Westley,*	German *Sp.*
Hammond, Edith Sybil,	*San Francisco,*	Ethics
Hancock, Guy,	*Altavista, Mo.,*	Law *Sp.*
Hardin, Eli Boyer,	*South Warsaw, O.,*	German
Hardy, Irene, A. B., Antioch Coll., 1885.	*Palo Alto,*	English
Hargreaves, George,	*Bronxville, N. Y.,*	Electrical Eng.
Harper, Fay Rusk,	*Rock Island, Ill.,*	History
Harper, Winnifred,	*Indianapolis, Ind.,*	Ethics
Harrelson, William Hasting,	*Tulare,*	Civil Eng.
Harrington, Ward Beecher,	*Washington, D. C.,*	Civil Eng.
Harrington, Wynne Powers,	*Hiawatha, Kan.,*	Economics
Harrington, William Swayzee,	*St. Helena,*	Law *Sp.*
Harris, Henry,	*Olympia, Wash.,*	Physiology
Harrison, Lewis Gooding,	*Los Angeles,*	Chemistry
Harter, Ralph Laban,	*San Jose,*	Civil Eng.
Hartley, Flora,	*Yankeetown, Ind.,*	Zoology
Harvey, Frederic Estabrook,	*Napa,*	Electrical Eng. *Sp.*
Harwood, Edward Charles,	*Ontario,*	Latin
Harwood, Henry,	*Louisville, Ky.,*	Psychology
Haven, Mattie Elizabeth,	*Oakland,*	English
Hawley, Hattie Hand,	*Palo Alto,*	German *Sp.*
Hays, Alice Newman,	*San Diego,*	English

Hays, Malcolm McCullough,	*Los Angeles,*	**Law**
Hayward, Ernest Chesney,	*Victoria, B. C.,*	Electrical Eng.
Hazzard, George Hercules,	*San Diego,*	English
Hazzard, Harry Conwell,	*San Diego,*	Economics
Hazzard, William Clarence,	*Claquato, Wash.,*	History
Hearne, Eleanor Virginia,	*San Diego,*	English
Heath, Harold,	*Palo Alto,*	Histology
A. B., Ohio Wesleyan Univ., 1893.		
Heney, Maud Cecelia,	*Redwood City,*	Spanish *Sp.*
Henion, Harry Sears,	*Warm Springs,*	Law
Henne, Chris,	*Los Angeles,*	Mechanical Eng.
Hennessey, Rose Helen,	*San Jose,*	History
Henry, Lou,	*Monterey,*	Geology
Henry, Lillian May,	*Hollister,*	Education *Sp.*
Herbst, Catherine Centennial,	*San Mateo,*	English
Herby, Nels Jensen,	*Mayfield,*	English
Herold, Ada Elizabeth,	*San Jose,*	History
Herrick, Jackman,	*Washington, D. C.,*	Law
Herrick, Jane Powers,	*Sacramento,*	Latin
Herrick, Kate D.,	*Sacramento,*	Latin
Herrold, George Herbert,	*San Jose,*	Civil Eng. *Sp.*
Hervey, Annie Cabe,	*Santa Ana,*	English
Hervey, Elizabeth.	*Santa Ana,*	English
Hetherington, Clark Wilson,	*Palo Alto,*	Education
Heyward, Mary Griggs,	*Rockford, Ill.,*	English *Sp.*
Heyward, Richard,	*Rockford, Ill.,*	Physiology
Hicks, Herbert Stephen,	*Rockford, Ill.,*	Law
Hiett, Russell Morley,	*Toledo, O.,*	Chemistry
Hill, Charles Caleb,	*Pasadena,*	German
Hill, Edith Louise,	*Pasadena,*	English
Hill, Harold Phillips,	*Redlands,*	English
Hill, Harry Preston,	*El Cajon,*	Economics
Hindry, Horace Hayes,	*Denver, Col.,*	Law
Hindry, Nettie Eliza,	*Denver, Col.,*	Latin
Hinsdill, Lester Jesse,	*Clarksburg,*	History
Hoag, Ernest Bryant,	*Pasadena,*	Physiology
B. S., Northwestern Univ., 1892; A. B., Stanford, 1895.		
Hodgkinson, Frances,	*San Francisco,*	Latin
Hodgson, Caspar Wistar,	*Pasadena,*	Law
Hodgson, Eunice Hazel,	*Pasadena,*	German
Hogg, Cora E.,	*Saratoga,*	German
Hogle, Charles Edward,	*Santa Ana,*	Electrical Eng.

Holbrook, Agnes Sinclair, B. S., Wellesley Coll., 1892.	*Marengo, Ia.,*	Sociology
Holcombe, Emma Lenore,	*Palo Alto,*	Drawing *Sp.*
Holley, Carl Hiram,	*Palo Alto,*	Electrical Eng.
Hollister, John James,	*Santa Barbara,*	Mining Eng.
Holly, Lillian May	*Palo Alto,*	Drawing *Sp.*
Holly, Theodora H.,	*Palo Alto,*	Drawing *Sp.*
Holmes, Marion Estelle,	*San Jose,*	Mathematics
Holsclaw, Grace Evelyn,	*Gilroy,*	German
Hoover, Herbert C.,	*Salem, Or.,*	Geology
Hopkins, Owen Griffith,	*Sacramento,*	History
Horst, Carl Herman,	*Butte, Mont.,*	Physiology
Hoshor, John Andrew,	*Tacoma, Wash.,*	Law
Hosmer, Alexander Townsend,	*Tacoma, Wash.,*	Economics
Houx, Susan Elizabeth,	*Warrensburg, Mo.,*	Hygiene
Howard, Alice Frost, Ph. B., University of Nebraska, 1876.	*Palo Alto,*	History
Howard, Fred Sisco,	*Baldwinsville, N. Y.,*	History
Howell, John Samuel,	*Hopeland,*	Mathematics *Sp.*
Hubbard, Ralph Beatty,	*Los Angeles,*	Electrical Eng.
Huff, Frank Lester,	*Mountain View,*	History
Hughes, Charles Colfax,	*Redwood City,*	Economics
Hughes George,	*Tahlequah, I. T.,*	Law
Hull, Warren,	*San Jose,*	History
Hulme, Edward Maslin,	*Portland, Or.,*	English
Hume, Elsie May	*Oakland,*	English
Husband, Richard Wellington,	*Moorefield, Ont.,*	Greek
Hussey, Lenora,	*Mendon, O.,*	Mathematics *Sp.*
Hutchings, Gertrude,	*Yosemite,*	English *Sp.*
Hyde, Harriet Sophia,	*San Francisco,*	Mathematics
Hyde, Walter Spalding,	*San Francisco,*	Electrical Eng.
Irwin, William Henry,	*Cavendish, Vt.,*	Chemistry
Irwin, William Henry,	*Denver, Col.,*	English
Jack, Francis Joseph,	*Decatur, Ill.,*	Horticulture *Sp.*
Jack, Mary Catherine,	*Truro, N. S.,*	English *Sp.*
Jack, Thomas Burrowes,	*Decatur, Ill.,*	History
Jacobs, Fanny Mabel,	*San Francisco,*	English
James, Harlean,	*Palo Alto,*	History
James, Laura Garner,	*San Jose,*	English
Jarman, Albert Hutchinson,	*San Jose,*	Law
Jeffs, Alexander Samuel,	*Kent, Wash.,*	Latin
Jennings, Robert,	*Laramie, Wyo.,*	Chemistry

Jennings, James Hazelton,	*San Francisco,*	Law *Sp.*
Johnson, Daisy Deane,	*Etna Mills,*	Botany
Johnson, Ernest Huston,	*Sacramento,*	Economics
Johnson, Grace A.,	*Etna Mills,*	English
Johnson, Merle De Vore,	*Oregon City, Or.,*	History
Johnson, Nello De Vore,	*Oregon City, Or.,*	History
Johnson, Samuel Edgar,	*San Jose,*	Civil Eng.
Johnston, Edward Neele,	*Portland, Or.,*	Electrical Eng.
Johnston, Howard Charles,	*Palo Alto,*	Electrical Eng. *Sp.*
Johnston, William Lee,	*Palo Alto,*	Mechanical Eng. *Sp.*
Jones, Ami Bartlett,	*Gold Hill, Nev.,*	Economics
Jones, Albert Lincoln,	*San Jose,*	Mathematics
Jones, Maud Bessie,	*Sacramento,*	Latin
Jones, Noble Wiley,	*Salt Lake City, Utah,*	Zoology
Jordan, Edith Monica,	*Palo Alto,*	History
Jordon, Willie Francis,	*North Ontario,*	Electrical Eng. *Sp.*
Joslin, Arba Vanderburg,	*Antioch,*	Electrical Eng.
Joss, Horace Wilder,	*Red Wing, Minn.,*	Mathematics *Sp.*
Jost, Fred,	*San Francisco,*	Mechanical Eng.
Joyce, Fred Lawrence,	*Redwood City,*	Physiology
Kaetzel, Charles Paul,	*Cambria,*	Economics
Karasek, Matthew,	*Tacoma, Wash.,*	Mechanical Eng.
Karsted, Alfred,	*Helena, Mont.,*	Physiology *Sp.*
Kasano, Hubert Yeizo,	*Tokio, Japan,*	Civil Eng.
Kaufman, Adolph G.,	*Olympia, Wash.,*	Civil Eng.
Keesling, Francis Valentine,	*San Jose,*	Law
Kellogg, Clara Pearle,	*Santa Rosa,*	Physiology
Kemp, William Webb,	*Palo Alto,*	Latin
Kendall, Arthur Porter,	*Petaluma,*	Greek *Sp.*
Kennedy, Martin Herbert,	*Denver, Col.,*	Law
Kenney, Elizabeth L.,	*Los Angeles,*	Law *Sp.*
Kessinger, Frederick Ernst,	*Rome, N. Y.,*	German
Kidwell, Anna M.,	*Kansas City, Mo.,*	Botany
Kidwell, Minna A.,	*Kansas City Mo.,*	German
Kimball, Dexter Simpson,	*Port Gamble, Wash.,*	Mech. Eng. *Sp.*
Kimball, Edwin Boyce,	*Haywards,*	Geology
King, Cameron Haight, Jr.,	*San Francisco,*	Economics
Kingore, Mary,	*Palo Alto,*	English
Kingore, Miller H.,	*Palo Alto,*	Law *Sp.*
Kinkaid, Ula Mae,	*Jamestown, N. Y.,*	English
Kinney, Enid,	*San Jose,*	Drawing
Kinney, Mary Ettie,	*San Jose,*	Physiology

Kinsey, Charles Hart,	*Eureka,*	Law
Kirk, Robert Clifford,	*St. Paul, Minn.,*	Electrical Eng. *Sp.*
Kirkbride, Walter Harold,	*Courtland,*	Civil Eng.
Kirtland, John Copeland, Jr.,	*Palo Alto,*	Latin
A. B., Hobart Coll., 1890; A. M., 1893.		
Kittredge, Maude Chase,	*Santa Barbara,*	Drawing
Klauber, Hugo,	*San Diego,*	Civil Eng.
Knowles, William Andrew, Jr.,	*Oakland,*	Architecture *Sp.*
Knox, Newton Booth,	*San Francisco,*	Mining Eng.
Köhler, Anna,	*St. Helena,*	English
Kubosawa, Yeusaku J.,	*Yechigo, Japan,*	Drawing *Sp.*
Labbé, Charles Henri,	*Portland, Or.,*	History
Lake, Francis Webster,	*Jamestown, N. Y.,*	History
Lamb, Ada Julia,	*Tacoma, Wash.,*	History
Lamb, Frank Haines,	*Walnford, N. J.,*	Physiology
Langford, James Terry,	*Lodi,*	Electrical Eng.
Langille, Herbert Bamford,	*Hood River, Or.,*	Mechanical Eng.
Lathrop, Caroline Josephine,	*Newman,*	Drawing *Sp.*
Laughlin, Homer, Jr.,	*East Liverpool, O.,*	Chemical Eng.
Lawrence, Ernest Edward,	*Lompoc,*	Mechanical Eng.
Lawshé, Jay Earl,	*Tacoma, Wash.,*	History
Lay, Lucia May,	*Rosedale, Wash.,*	English
Leavitt, Granville E.,	*Yerington, Nev.,*	Physiology *Sp.*
Leavitt, Moses Brown,	*Norridgewock, Me.,*	Economics
Leavitt, Orpha Euphemia,	*Crete, Neb.,*	History
A. B., Doane Coll., 1886.		
Leddy, Mary Frances,	*Santa Rosa,*	English
Lee, Ella Frances,	*Chicago, Ill.,*	Mathematics
Lee, Francis Valentine T.,	*Victoria, B. C.,*	Electrical Eng. *Sp.*
Leithold, Christian Ferdinand,	*Postville, Ia.,*	Physiology
Lendrum, Birney Alexander,	*San Jose,*	Physiology
Lesley, Chloe Francis,	*Santa Ana,*	Drawing
Lesley, Everett Parker,	*Santa Ana,*	Mechanical Eng.
Lewers, Charles Ross,	*Franktown, Nev.,*	German
A. B., Univ. of Nevada, 1893.		
Lewis, Abraham,	*Gilroy,*	History
Lewis, Josephine Gertrude,	*San Jose,*	German *Sp.*
Lewis, William Stanley,	*Spokane, Wash.,*	Law
Libby, William Sumner,	*Pomona,*	Psychology
L'hote, Dorothy Agnes,	*Menlo Park,*	English *Sp.*
Lieb, Lida Campbell,	*San Jose,*	English *Sp.*
Lillard, Jeremiah,	*Santa Barbara,*	Economics *Sp.*

Lillick, Ira Shell,	*Lawrence,*	Law
Lincoln, John Spencer,	*Santa Barbara,*	Electrical Eng.
Liter, Thomas Johnson,	*Tacoma, Wash.,*	Electrical Eng. *Sp.*
Little, Emma Funke,	*Palo Alto,*	History
A. B., Stanford, 1895.		
Loehr, Adeline Matilda,	*St. Louis, Mo.,*	Education
Longley, Mary Emily,	*Mountain View,*	Mathematics
Longwell, Benton Elkins,	*Santa Fe, N. M.,*	Physiology
Longwell, Horace Craig,	*Santa Fe, N. M.,*	Greek
Longwell, William David,	*Santa Fe, N. M.,*	Latin
Look, Samuel Miller,	*Prattsburg, N. Y.,*	Education
Lord, Flora Addie,	*Virginia City, Nev.,*	French
Lord, Frederica Caro,	*Virginia City, Nev.,*	French
Lowe, Mabel,	*Warrensburg, Mo.,*	History
Lowell, Arthur,	*Eugene, Or.,*	French *Sp.*
Lowell, Ellen Louise,	*Calais, Me.,*	Physiology
Lum, Clara Emily,	*Dayton, Or.,*	Education
Lurch, Jacob B.,	*Cottage Grove, Or.,*	German
Lyle, Annie Galloway,	*San Francisco,*	Physiology
Lyman, Edmund Rensellaer,	*Palo Alto,*	Chemistry
Lyon, Dorsey Alfred,	*East Las Vegas, N. M.,*	Chemistry
Macartney, Henry,	*Liverpool, Eng.,*	Drawing *Sp.*
McBride, Howard Robertson,	*Spokane, Wash.,*	Physiology *Sp.*
McCall, Elizabeth Adeline,	*Oakland,*	English
McChesney, Leroy Edward,	*Alameda,*	History
McClelland, David Thompson,	*Palo Alto,*	History
A. B , Washington and Jefferson Coll., 1879; A. M., 1883.		
McCord, William Hamilton,	*Farmer City, Ill.,*	Mech. Eng.
McCormack, Edgar W.,	*Portland, Or.,*	Civil Eng. *Sp.*
McCray, Alfred Marion,	*Palo Alto,*	Civil Eng. *Sp.*
McCray, Stella Alice,	*Palo Alto,*	Physiology
McDaniels, John Henry,	*Tacoma, Wash.,*	English
McDonnell, Robert Emmit,	*Bozeman, Mont.,*	Civil Eng.
Mace, Lewis Sayre,	*San Jose,*	Physiology
McFadden, Effie Belle,	*Santa Ana,*	Botany
McFarland, Robert Daremas,	*San Jose,*	History
McGregor, Richard Crittenden,	*Denver, Col.,*	Zoology
McGrew, John Tarn,	*Honolulu, H. I.,*	English
McGuire, William Lewis,	*Hanford,*	Law
McIntosh, James,	*Palo Alto,*	Physics
McIntosh, Walter Marlette,	*Los Angeles,*	Law
McKean, Elizabeth Pauline,	*Astoria, Or.,*	French

McKenney, Grace,	*San Jose,*	German *Sp.*
McKevett, Hattie,	*Santa Paula,*	Romanic Lang.
Mackintosh, Gertrude,	*Seattle, Wash.,*	English
Mackintosh, Kenneth,	*Seattle, Wash.,*	English
McLaine, William Laughlin,	*San Francisco,*	Economics
Maclaren, Miriam Evalyn,	*San Jose,*	English
MacLaughlin, Hilda,	*Victoria, B. C.,*	English
Maclean, Donald Gray,	*San Francisco,*	Chemistry
McLellan, Frank Lloyd,	*Belmont,*	Mining Eng.
McNeil, Wilber Charles,	*Sioux City, Ia.,*	Economics
McPherson, Wallis Daniel,	*San Francisco,*	Electrical Eng. *Sp.*
McWilliams, Anna Louise,	*Odell, Ill.,*	Greek
McWilliams, Mary Elizabeth,	*Odell, Ill.,*	German
Madsen, Robert Hansen,	*Palo Alto,*	Physiology *Sp.*
Magee, Chester Lea,	*San Diego,*	Physiology
A. B., Stanford, 1895.		
Magee, Ernest DeLos,	*San Diego,*	History
Maher, Minnie,	*Sutter Creek,*	Education *Sp.*
Main, Marylyn,	*Santa Barbara,*	Zoology
Maitland, Louise,	*Palo Alto,*	Education
Malcolm, Norman Eugene,	*Palo Alto,*	Law *Sp.*
Manahan, Roland Harry,	*Pasadena,*	Electrical Eng.
Mann, Laura Louise,	*San Jose,*	English
Mannon, Charles McFerson,	*Ukiah,*	History
Manzer, Lottie Mabel,	*San Jose,*	English
Marble, John Emerson,	*Los Angeles,*	Economics
March, Maud,	*Narberth, Pa.,*	Hygiene *Sp.*
Marsh, Gertrude May,	*Santa Cruz,*	Latin
Martin, Anna Henrietta,	*Reno, Nev.,*	History
A. B., Univ. of Nevada, 1894.		
Martin, Emma Louise,	*Rahway, N. J.,*	English
Martin, Gertrude Alice,	*Reno, Nev.,*	French
Martin, Mary Elizabeth,	*Buffalo, N. Y.,*	Botany *Sp.*
Matson, Florence Lilian,	*Palo Alto,*	Hygiene
Matthes, Fred Albert,	*Albuquerque, N. M.,*	Economics *Sp.*
Matthews, Frank Cameron,	*Salem, Or.,*	Physiology
Matthews, William Jay,	*Buffalo, Ill.,*	Economics
Maverick, William Chilton,	*San Antonio, Tex.,*	English
Mead, Mabel,	*Santa Cruz,*	English
Means, John Harrison,	*Moorefield, Ind.,*	Geology
A. B., Indiana Univ., 1888; A. M., Stanford, 1892.		
Meek, Seth Eugene,	*Fayetteville, Ark.,*	Zoology
B. S., Indiana Univ., 1884; M. S., 1886; Ph. D., 1891.		

Melkies, Charles,	*Riga, Russia,*	German *Sp.*
Merrill, Samuel, Jr.,	*Pasadena,*	English
A. B., Stanford, 1895.		
Merritt, Alberta Lois,	*Woodland,*	English
Metzler, Clara Louise,	*San Jose,*	Drawing *Sp.*
Meyer, Emma Elizabeth,	*San Diego,*	English *Sp.*
Meyrick, Mary Lily,	*Santa Cruz,*	English *Sp.*
Miller, Alfred S,.	*Normal Square, Pa.,*	Chemistry
A. M., Wichita Univ., 1890; Ph. D., 1892; A. B., Stanford, 1895.		
Miller, Charles Wesley,	*Guthrie, O. T.,*	History
Miller, Elmer Isaiah,	*San Diego,*	History
Miller, George Amos,	*Reedley,*	Economics
Miller, Mabel Louise,	*Longville,*	English *Sp.*
Mills, Bernard Lee,	*El Paso, Ark.,*	Law
Mills, Helen Hall,	*Menlo Park,*	Drawing *Sp.*
Milward, William B.,	*Amity, Mo.,*	Law *Sp.*
Mitchel, Edgar Lillian,	*Fowler,*	Education
Mitchell, Deane Prescott,	*Palo Alto,*	Mining Eng.
Mitchell, Fanny Howe,	*Palo Alto,*	Drawing
Miyahara, Joie Hisataro,	*Hiroshima, Japan,*	Elect. Eng. *Sp.*
Monihon, Andrew James,	*Phœnix, Ariz.,*	Law *Sp.*
Montgomery, Alfred Cookman,	*Oakland,*	Latin
Moody, Dora Estey,	*Pasadena,*	German
Moore, Roy,	*Oakland,*	Mining Eng. *Sp.*
Moore, Thomas Kenney,	*Lima, O.,*	Physiology *Sp.*
Morden, Lucena Mandana,	*Portland, Or.,*	History *Sp.*
Morey, Maud Whitcomb,	*Chicago, Ill.,*	Botany
Morgan, Andrew Bertram,	*Spanish Fork, Utah,*	Law *Sp.*
Morgan, Crace Cecelia,	*Ontario,*	Latin
Morris, Harriet Newell,	*Upper Alton, Ill.,*	Education *Sp.*
Morrison, Frank William,	*Saxton's River, Vt.,*	Economics
Morrison, Maurice,	*Ithaca, N. Y.,*	Law *Sp.*
Morse, Arthur Wakefield,	*Odell, Ill.,*	Economics
Morse, Harry Wheeler,	*San Diego,*	Chemistry
Morton, Harriet Mason,	*Palo Alto,*	English
Morton, Oliver Perry,	*Palo Alto,*	Mathematics
Mount, Lucy C.,	*Palo Alto,*	History
Mount, Nellie Viola,	*Palo Alto,*	English
Murphy, James Edmund,	*San Francisco,*	Law
Murphy, Thomas John,	*Riverside,*	History
Murray, Herbert,	*Rockland, Me.,*	Chemistry
B. S., Maine State Coll., 1894.		
Murray, Jennie Deuchar,	*Eureka,*	German

Myers, Henry Coffinberry,	*Cleveland, O.,*	Drawing
Ph. D., Strassburg Univ., 1891.		
Nagel, Walter Gilmore,	*Davenport, Ia.,*	History
Nakamura, Hatsuwo,	*Tokio, Japan,*	Chemistry
Nash, Katharine Louise,	*Pasadena,*	Latin
Neidig, William Jonathan,	*Los Angeles,*	English
Nelk, Carl Nicholas,	*Williams,*	Mechanical Eng. *Sp.*
Nelson, Andrew Edward,	*Paso Robles,*	German
Newcomb, Lucy Helen,	*East Machias, Me.,*	Latin
Newell, James Blair,	*Santa Clara,*	Education
A. B., Stanford, 1894.		
Newman, Charles James,	*St. Helena,*	History
Newsom, John Flesher,	*Elizabethtown, Ind.,*	Geology
A. B., Indiana Univ., 1891; A. M., Stanford, 1892.		
Nicewonger, Charles Hasting,	*Stockton,*	Electrical Eng.
Nicholson, Francis John,	*Victoria, B. C.,*	Physiology
Noble, Emma	*San Jose,*	Drawing *Sp.*
Noble, Willis Craig,	*San Rafael,*	Civil Eng. *Sp.*
Nourse, Joseph Pomeroy,	*Santa Ana,*	Greek
Nourse, James Rittenhouse,	*Santa Ana,*	Economics
Nowell, John A.,	*College Park,*	Education
A. B., Stanford, 1893.		
Nutting, Perley Gilman,	*Randolph, Wis.,*	Physics
Oakes, Edward Leslie,	*Oakes, Col.,*	Law
O'Brien, Maurice William,	*San Jose,*	Electrical Eng.
O'Farrell, Edith,	*San Diego,*	Education
Offield, Lorenzo Adolphus,	*Santa Clara,*	Greek
A. B., Stanford, 1894.		
O'Neil, Robert Joseph,	*Portland, Or.,*	Law
Orcutt, William Warren,	*Santa Paula,*	Civil Eng.
Orellana, Juan Rafael,	*Suchitota, C. A.,*	Entomology *Sp.*
Osborne, Henry Zenas, Jr.,	*Los Angeles,*	Civil Eng.
Osborne, Lucy Ellery,	*Watsonville,*	Mathematics
Osborne, Mary Myrtle,	*Warrensburg, Mo.,*	English
Osborne, Sherrill Blasdel,	*Los Angeles,*	Law
Oskison, John Milton,	*Vinita, I. T.,*	Law
Otaki, Keinosuke,	*Tokio, Japan,*	Zoology
A. B., Stanford, 1894.		
Outcalt, Irvin Erastus,	*San Diego,*	English
Packard, Herbert Ware,	*San Diego,*	Economics
Packard, Mabel Blanch,	*San Diego,*	English
Painter, Jerome B.,	*San Francisco,*	Physiology *Sp.*
Palmer, Burton Murray,	*Saratoga,*	Economics

Palmer, Cora Millacent,	*Saratoga,*	Economics
Parcell, Charles Henry,	*Tampa, Fla.,*	Civil Eng.
Parke, Emily B.,	*Moreno,*	German
Patterson, Clyde Llewlylen,	*Eugene, Or.,*	Mechanical Eng. *Sp.*
Patterson, Mary Alma,	*San Jose,*	Education
Patterson, Mary Virginia,	*Salt Lake City, Utah,*	German
Patterson, Rose,	*San Jose,*	Botany
Pauly, James Aaron,	*San Diego,*	Civil Eng. *Sp.*
Payne, Rose,	*San Jose,*	English
Pearson, Harold Peter,	*Chicago, Ill.,*	History *Sp.*
Pearson, John Winfield,	*Oakland,*	Electrical Eng. *Sp.*
Peck, Allan Earle,	*San Diego,*	Education
Peery, Jennie June,	*San Diego,*	English
Peet, Florita Lindsley,	*San Jose,*	English *Sp.*
Penniman, Bessie Morris,	*Oakland,*	Latin
Perkins, Schuyler Dean,	*Boise City, Idaho,*	Law *Sp.*
Perrault, Alfred Frank,	*Dayton, Minn.,*	Chemistry *Sp.*
Phillips, Charlotte,	*Seattle, Wash.,*	English
Picher, Oliver S., Jr.,	*Pasadena,*	Greek
Pickens, Rush Franklin,	*Indianapolis, Ind.,*	Civil Eng. *Sp.*
Pierson, Charles J.,	*Auburn, Neb.,*	Zoology
Pillsbury, Arthur Clarence,	*Auburn,*	Mechanical Eng. *Sp.*
Pincus, Harry,	*Tacoma, Wash.,*	Law
Pinkham, Charles B.,	*Sacramento,*	Physiology
Pitcher, Marie Louise,	*Tacoma, Wash.,*	English
Platt, Jacob Harry,	*Johnstown, Pa.,*	Physiology *Sp.*
Platt, Samuel,	*Carson City, Nev.,*	History
Platte, Frank Theodore,	*Marysville,*	Mechanical Eng. *Sp.*
Pleasants, Emma Shaw,	*Pottsville, Pa.,*	Hygiene
B. S., Wellesley Coll., 1890.		
Poindexter, Henry Tyhrie,	*Dillon, Mont.,*	Mech. Eng. *Sp.*
Polk, Mary,	*Bruceville, Ind.,*	English
A. B., Indiana Univ., 1891; A. B., Stanford, 1895.		
Pollock, Alfred Herman,	*Palo Alto,*	Law
Pomeroy, Horace,	*Oswego, Or.,*	Electrical Eng.
Pomeroy, Thomas Henry,	*Oswego, Or.,*	Electrical Eng.
Pool, Eliza A.,	*Ft. Stanton, N. M.,*	English *Sp.*
Poole, Arthur French,	*Washington, Pa.,*	Astronomy
Pope, Charles Stockton,	*Angel Island,*	Civil Eng.
Porter, D'Arcy Allan,	*Salinas,*	Civil Eng.
Porter, Edith Virginia,	*Hydesville,*	Latin
Porter, Mark Sibley,	*Chicago, Ill.,*	Mathematics *Sp.*

Porter, Wilmattie,	*San Diego,*	**Hygiene**
Potter, Winfred White,	*San Francisco,*	**English**
Pratt, Armstrong Cooper,	*Wichita Falls, Tex.,*	**Elec. Eng.** *Sp.*
Pratt, Minot Tully,	*Kansas City, Mo.,*	**Civil Eng.**
Pratt, Nathan Raymond,	*Sudbury, Mass.,*	**Civil Eng.**
Preeman, Jacob Meyer,	*Kansas City, Mo.,*	**Civil Eng.**
Price, Wilson Clark,	*Jamestown, N. Y.,*	**History**
Price, William Wightman,	*Oakland,*	**Zoology**
Prichard, William Anthony,	*Portsmouth, O.,*	**Mech. Eng.** *Sp.*
Pryne, Marion,	*Denver, Col.,*	**Latin**
Pulcifer, Caroline May,	*Palo Alto,*	**English**
Purdy Lillian E.,	*San Francisco,*	**English**
Quelle, Julius A.,	*Long Island City, N. Y.,*	**Civil Eng.**
Quintanilla, Carlos,	*Salvador, C. A.,*	**Mechanical Eng.** *Sp.*
Raish, Ralph Rittenhouse,	*Marysville,*	**Law**
Rankin, Orville Montgomery,	*Portland, Or.,*	**Law**
Rasch, Fred A.,	*Portland, Or.,*	**Law** *Sp.*
Ray, Charles,	*Galt,*	**History**
Ray, Clinton Dewitt,	*Fillmore, Utah,*	**English** *Sp.*
Ray, Lillian Emeline,	*Santa Cruz,*	**Physics**
Ray, May Caldwell,	*Chicago, Ill.,*	**Economics**
Raymond, Elma Annette,	*Palo Alto,*	**Education**
Rea, Edwin Milton,	*San Jose,*	**Latin**
Rederick, John Elward,	*Sioux City, Ia.,*	**Physiology**
Redman, Oda,	*Watsonville,*	**English**
Redon, Alexander L., Jr.,	*New Orleans, La.,*	**Civil Eng.**
Redon, Louis Hartnagel,	*Victoria, B. C.,*	**Physiology**
Reeves, Jessie Muriel,	*Seattle, Wash.,*	**English**
Reeves, Minnie,	*Seattle, Wash.,*	**German**
Reeves, William Henry, Jr.,	*Seattle, Wash.,*	**Electrical Eng.**
Reichenbach, Edwin Lincoln,	*Seatle, Wash.,*	**Physiology**
Reilay, Luella May,	*Oakland,*	**English**
Rendtorff, Karl G., A. M., Stanford, 1894.	*Preetz, Germany,*	**German**
Reynolds, Fred Emory,	*Aurora, Ill.,*	**Mining Eng.** *Sp.*
Reynolds, Harry B.,	*Oakland,*	**Physiology**
Reynolds, Jackson Eli,	*Oakland,*	**Law**
Rice, Archie Bermingham,	*Santa Barbara,*	**English**
Rice, John Ainsworth,	*Fallbrook,*	**Physics** *Sp.*
Rice, John Bermingham,	*Santa Barbara,*	**Geology**
Richards, Flora Valentine,	*College Park,*	**Mathematics**
Richards, Sadie Lillian,	*Tacoma, Wash.,*	**French** *Sp.*

Richardson, James Albert,	*San Francisco,*	**Zoology** *Sp.*
Riggins, Clarence Nye,	*St. Helena,*	**Law**
Risley, Allan Douglass,	*Kansas City, Mo.,*	**Electrical Eng.**
Riter, George Washington,	*Salt Lake City, Utah,*	**Mining Eng.**
Roach, George Humphrey,	*Portland, Or.,*	**Latin**
Roberts, Don Carlos,	*Salt Lake City, Utah,*	**History** *Sp.*
Roberts, Elizabeth Clarice,	*College Park,*	**English** *Sp.*
Robertson, Elsie Blanch,	*Jackson,*	**Education**
Robinson, Edwin Gardner, Jr.,	*Memphis, Tenn.,*	**Electrical Eng.**
Robinson, George Hagar,	*San Francisco,*	**Latin**
Robinson, Harry Burdett,	*Oskaloosa, Ia.,*	**Mechanical Eng.**
Rockhold, John Ellsworth,	*Riverside,*	**Civil Eng.**
Rogers, Lulu Sherwood,	*Portland, Or.,*	**History**
Rolfe, Frank,	*Los Angeles,*	**Civil Eng.**
Roper, Norman Brownell,	*Santa Ana,*	**Mechanical Eng.**
Rose, Stella,	*Pomona,*	**Physical Training**
Rose, Walter Malins,	*Ontario,*	**History**
A. B., Stanford, 1895.		
Rosenbaum, Solie D.,	*Stockton,*	**German**
Rosencrantz, Esther B.,	*San Francisco,*	**English**
Rosendale, Charles Edmund Barry,	*San Francisco,*	**History**
Ross, John Mason,	*Steubenville, O.,*	**Law**
Ross, Margaret,	*San Jose,*	**Hygiene** *Sp.*
Rossiter, Janette Hall,	*Sheridan, Mont.,*	**German**
Rothrock, Edward Hiram,	*Spokane, Wash.,*	**Law**
Roy, Roland Free,	*Virginia City, Nev.,*	**Mech. Eng.**
Ruddell, Almus Goar,	*San Jose,*	**History**
Ruddell, Frank Stallo,	*San Jose,*	**History**
Russ, Bertha,	*Ferndale,*	**French** *Sp*
Russell, Jessie Eleanor,	*San Jose,*	**History**
Ph. B., Univ. of the Pacific; A. M., Stanford, 1893.		
Russell, Tracy George,	*San Francisco,*	**Physiology**
Rutherford, John Henry,	*Fresno,*	**English**
Rutter, Cloudsley,	*Long Pine, Neb.,*	**Zoology**
B. S., Doane Coll., 1892.		
Ryan, Jessie A.,	*Stockton,*	**English**
Salisbury, Dallas Merland,	*Tacoma, Wash.,*	**Electrical Eng.**
Sampson, George Henry,	*Portland, Or.,*	**Electrical Eng.**
Sandwick, Richard Lanning,	*Dryden, N. Y.,*	**Latin**
Saunders, Arthur Bertram,	*Woodbridge,*	**Mechanical Eng.**
Sayer, Eugene Young,	*Denver, Col.,*	**Electrical Eng.**
Schallenberger, Francis Reese,	*San Jose,*	**Latin**
Schallenberger, Margaret E.,	*San Jose,*	**Education**

Schleiden, John Hidalgo,	*San Francisco,*	Mathematics
Schmidt, Alfred Francis William,	*Turner, Or.,*	German
Schneider, Fred Arthur,	*College Park,*	Law
Schopbach, Leonora,	*Pasadena,*	English
Schroeder, Henry George Washington,	*Dixon,*	Electrical Eng.
Schuele, Louis Fred,	*Vancouver, Wash.,*	Civil Eng.
Schulte, William Henry Gerard,	*San Francisco,*	History
Scofield, Norman Bishop,	*Washington, Ia.,*	Zoology
Scott, George Winfield,	*Watertown, N. Y ,*	Latin
Scott, Leslie Preston,	*San Francisco,*	History
Seale, Alvin,	*Fairmount, Ind.,*	Zoology
Searles, Dennis,	*Mojave,*	Chemical Eng.
Secrest, Emma,	*Randolph, Kan.,*	English
B. S., Kansas State Agr. Coll., 1890.		
Sewall, Edward Cecil,	*Portland, Or.,*	Physiology
Seward, George Lewis,	*San Erancisco,*	Physiology *Sp.*
Seybolt, Fred Lewis,	*San Jose,*	Law
Seybolt, Nellie Josephine,	*San Jose,*	German *Sp.*
Shaw, Edmund Jeremiah,	*Palo Alto,*	Latin
A. B., Univ. of Michigan, 1887.		
Shedd, Solon,	*Shedd, Or.,*	Geology
Sheehan, John Francis, Jr.,	*San Francisco,*	History
Sheldon, Henry Davidson,	*Santa Clara,*	History
Shelley, Elsie Hjerleid,	*Berryessa,*	Physiology
A. B., Stanford, 1894.		
Shepherd, Frank Irving,	*Kyle, O.,*	Chemistry
Shepherd, Frank Wiley,	*Elgin, Ill.,*	Economics
Shepler, Katherine Marvin,	*Council Bluffs, Ia.,*	English
Shoemaker, Clara Maude,	*Los Gatos,*	French
Shoemaker, Harry Ives,	*Tacoma, Wash.,*	Chemistry
Short, Frank Rice,	*Glenbrook, Nev.,*	Electrical Eng.
Sibley, Elmer Henry,	*Tulare,*	Civil Eng. *Sp.*
Simmons, Samuel Ewer,	*Sacramento,*	Chemistry
Simons, Percy Oveitt,	*Riverside,*	Electrical Eng.
Simons, Sarah Emma,	*Washington, D. C.,*	German
Simpson, Joseph Manly,	*Kamloops, B. C.,*	Electrical Eng.
Sladen, Harry Stinson,	*Portland, Or.,*	Electrical Eng.
Slayton, Helen Elizabeth,	*Stowe, Vt.,*	Latin
A. B., Stanford, 1894.		
Sloan, James Edward,	*Palo Alto,*	Greek
Smith, Aifred Augustus,	*Astoria, Or.,*	History
Smith, Cecil Henry,	*Oakland,*	History
Smith, Elinor Alma,	*Portland, Or.,*	Botany *Sp.*

Smith, George Edgar,	*Haywards,*	Economics *Sp.*
Smith, Harlan Clinton,	*Portland, Or.,*	English
Smith, Harold Edward,	*San Francisco,*	Greek
Smith, Kathryne Janette,	*San Jose,*	English
Ph. B., Univ. of the Pacific, 1888.		
Smith, Lewis Howell,	*Fresno,*	Law
Smith, Leigh Richmond,	*San Jose,*	Latin
A. B., Princeton Coll., 1872; B. D. and A. M., 1875.		
Smith, Marie Blythe,	*San Jose,*	History
Smith, Margaret Mabel,	*Biggs,*	Mathematics *Sp.*
Smith, Mary Roberts,	*Palo Alto,*	Sociology
Ph. B., Cornell Univ., 1880; M. S., 1882.		
Smith, Rose Flora,	*Los Angeles,*	English
Smith, Robert Kirby,	*San Jose,*	History
Smyth, Winfield Scott, Jr.,	*Chicago, Ill.,*	Chemistry
Smythe, Charlotte,	*Santa Rosa,*	Latin
Snipes, Ben Elliott, Jr.,	*Seattle, Wash.,*	History
Snow, Frank Jotham,	*Palo Alto,*	Electrical Eng. *Sp.*
Snow, William Freeman,	*Oakland,*	Chemistry
Snyder, Charles David,	*Fletcher, Wash.,*	Physiology
Snyder, Ferdinand, Jr.,	*San Jacinto,*	Electrical Eng.
Snyder, John O.,	*Waterloo, Ind.,*	Zoology
Soper, Harleigh Frederic,	*San Francisco,*	Physiology
Soper, William Henry,	*Honolulu, H. I.,*	Elec. Eng. *Sp.*
Southard, Carroll O'Brien,	*Palo Alto,*	Physiology *Sp.*
Southwick, Edmund Carmel,	*Mayfield,*	Electrical Eng.
Spalding, Alfred Baker,	*Atchinson, Kan.,*	Physiology
Spencer, Louis Bernard,	*Ogden, Utah,*	Civil Eng.
Spencer, Rollin Herbert,	*Council Bluffs, Ia.,*	Latin
Spinks, Edward Lincoln,	*Merced,*	Mathematics
Squire, Charles Henry,	*San Jose,*	History
Squire, John Adams,	*Palo Alto,*	Latin
A. B., Harvard Univ., 1884.		
Stadtmüller, Henrietta Louise,	*San Francisco,*	English
Stafford, Walter Alfred,	*Santa Ana,*	Mathematics
Stanley, Benjamin Barney,	*Menlo Park,*	Mechanical Eng. *Sp.*
Stanley, Clio Seward,	*Banner,*	Electrical Eng. *Sp.*
Stanley, Thomas David,	*Banner,*	Electrical Eng. *Sp.*
Stansbery, Ernest,	*Portland, Or.,*	Law
*Stark, Herbert Spencer,	*Cleveland, O.,*	Geology
A. B., Stanford, 1895.		

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* Work completed, Summer School, 1894.

Starks, Edwin Chapin,	*Mayfield*,	Zoology *Sp.*
Stebbins, Londa Loleta,	*Oakland*,	Hygiene *Sp.*
Steel, Harry Bismarck,	*Hilgard, Or.*,	Economics
Steele, George Martin,	*San Miguel*,	Economics
Steffens, Laura,	*Sacramento*,	English
Steffens, Lottie,	*Sacramento*,	English
Steinhart, Leon Hirsch,	*Portland, Or.*,	Law *Sp.*
Stewart, Lorena,	*Santa Barbara*,	Drawing *Sp.*
Stinson, Maude Evangeline,	*San Jose*,	English
Stoddard, Charles Harvey,	*San Jacinto*,	Mechanical Eng.
Stokes, Susie Gabriella,	*San Diego*,	Botany
Stoltenberg, Clara,	*East Los Angeles*,	Education
Storey, Thomas Andrew,	*Gold Hill, Nev.*,	History
Storke, Thomas More,	*Santa Barbara*,	Latin
Stowe, John Reynolds,	*Menlo Park*,	Law
Stowell, John Matson, A. B., Knox Coll., 1891; A. M., 1894.	*Palo Alto*,	Zoology
Straight, Edith Janet,	*Bradford, Pa.*,	English
Straight, Herbert Randall,	*Bradford, Pa.*,	Economics
Stratton, George Draper,	*Riverside*,	Civil Eng.
Strohn, Roys Nelson,	*Los Angeles*,	English
Strong, Will Austin,	*Los Angeles*,	Economics
Strowbridge, Mary Howard,	*Portland, Or.*,	German
Stuart, William Elder,	*San Francisco*,	Geology
Sutherland, William Angus,	*East Oakland*,	Law *Sp.*
Swain, Robert Eckles,	*Palo Alto*,	Chemistry *Sp.*
Swenson, John Canute,	*Pleasant Grove, Utah*,	English *Sp.*
Switzer, John Marion,	*Peru, Ind.*,	History
Taber, Walter Cox,	*Stockton*,	Chemistry
Taggart, Louis Edward,	*Grand Rapids, Mich.*,	Physics *Sp.*
Taylor, George Burrowes,	*Edwardsville, Ill.*,	Law
Taylor, Winifred Hawkins,	*Palo Alto*,	English
Teggert, Frederick John, A. B., Stanford, 1894.	*Palo Alto*,	English
Temple, Grace Douglas,	*Los Gatos*,	Latin
Terrell, Glanville, A. B., Stanford, 1894.	*Louisa C. H., Va.*,	Greek
Textor, Lucy Elizabeth, A. B., Univ. of Michigan, 1894.	*Chicago, Ill.*,	History
*Thaxter, Harry Clinton, A. B., Stanford, 1895.	*Palo Alto*,	Electrical Eng.

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* Work completed, Summer School, 1894.

Thoits, Edward Clair,	*Palo Alto,*	**Latin**
Thomas, Benjamin,	*Palo Alto,*	**Physiology**
Thomas, Cora,	*Storm Lake, Ia.,*	**English**
Thomas, Chester A.,	*Los Angeles,*	**Electrical Eng.**
Thomas, John Shepard,	*San Francisco,*	**Civil Eng.** *Sp.*
Thompson, Charles Lawrence,	*Santa Barbara,*	**Economics**
Thompson, Herbert Cooper,	*Eugene, Or.,*	**Greek**
Thompson, John West,	*Redwood City,*	**Electrical Eng.**
Timm, William Delbert,	*Dixon,*	**German** *Sp.*
Timmons, Joseph Henry,	*Perris,*	**Economics**
Tobiason, Ole,	*Brookfield, Wash.,*	**Civil Eng.**
Toll, Abel Hyde,	*Baldwinsville, N. Y.,*	**Civil Eng.**
Tompkins, Clara Torr,	*Paris, Ill.,*	**Mathematics**
Tompkins, Zach,	*Paris, Ill.,*	**Mathematics**
Toombs, George,	*Modesto,*	**Electrical Eng.**
Townsend, Bertrand William,	*Palo Alto,*	**Architecture**
Townsend, Mabel Anna,	*Palo Alto,*	**Physiology**
Treat, Fred Aldrich,	*Salinas,*	**History**
Tripp, Don Everett,	*Vallejo,*	**Civil Eng.**
Trumbo, Laura Adella,	*Columbus Grove, O.,*	**Physiology**
Tucker, Clementine,	*Redlands,*	**Latin**
Tucker, Hannah Adella,	*Ontario,*	**Latin**
Tucker, Milo Asem,	*Palo Alto,*	**Education**
Tucker, Mary Frances,	*Palo Alto,*	**History** *Sp.*
Turner, Harry Coburn,	*Los Angeles,*	**Chemistry**
Vance, Jessica S., Ph. B., Univ. of the Pacific, 1887.	*San Jose,*	**English**
Van Denburgh, John, A. B., Stanford, 1894.	*Los Gatos,*	**Zoology**
Vanderveer, George Francis,	*Grinnell, Ia.,*	**History**
Van Fossen, Frank Bradley,	*Dunsmuir,*	**Electrical Eng.**
Van Norden, Rudolph Warner,	*Auburn,*	**Mechanical Eng.**
Van Patten, Hanna Mabelle,	*Oregon, Ill.,*	**Physiology** *Sp.*
Vincent, Fred Cameron,	*Odell, Ill.,*	**Economics**
Vinyard, Helen Plato,	*Santa Monica,*	**Physical Training**
Vostrovsky, Clara,	*San Jose,*	**Education**
Wade, Junia Anne,	*Oregon City, Or.,*	**Physiology** *Sp.*
Waggoner, Fieldon Woodman,	*Sacramento,*	**Physiology** *Sp.*
Wagner, Pearl,	*San Diego,*	**English**
Walker, Charles Ashley,	*Chico,*	**Law**
Walker, Frank Harvey,	*San Francisco,*	**Physiology**
Walker, Laura Winnette,	*Palo Alto,*	**French** *Sp.*

Walker, Paul Elliott,	*Holton, Kan.,*	Economics
Walter, Mary E.,	*San Jose,*	English
Wardall, Ralph Hewitt,	*Duarte,*	History
Warden, Christie E ,	*San Francisco,*	English
Warren, Howard Saunders,	*Bucksport, Me.,*	Electrical Eng.
Washburn, Jessica Thompson, A. B., Stanford, 1892.	*San Jose,*	English
Watson, Frank Milton,	*San Jose,*	Mechanical Eng.
Watson, James Owen,	*Portland, Or.,*	Latin
Watt, Fred William,	*Sacramento,*	Civil Eng. *Sp.*
Wayland, Lucy Miller,	*San Jose,*	Histology *Sp.*
Weaver, Anna Frances,	*Logansport, Ind.,*	Latin
Webb, Winifred,	*Pasadena,*	English
Webster, David Hutton,	*National City,*	Economics
Webster, Erastus Bartlett,	*San Diego,*	Economics
Webster, Mary Clifford,	*San Diego,*	English
Wehner, Ida,	*Evergreen,*	German *Sp.*
Welch, Horace Herbert,	*Los Angeles,*	Physics
Weldon, Roy,	*Los Angeles,*	Law
Wells, William Bittle,	*Portland, Or.,*	English
Welshans, Will Bemis,	*Omaha, Neb.,*	English
Westphal, Clara L. Percy,	*San Jose,*	Education
Wheeler, Alice Eugenie,	*Portland, Or.,*	English
White, Arthur Hain,	*Live Oak,*	Physiology
White, James Corbett,	*Honolulu, H. I.,*	Civil Eng. *Sp.*
White, Paul Helb,	*Sedalia, Mo.,*	Mechanical Eng.
Whited, Jesse Meigs,	*Dunsmuir,*	Law
Whiting, Lulu Natalia,	*Mountain View,*	Latin
Whittier, Florence Bertha,	*Riverside,*	Greek
Whittier, Ida Celia,	*Pocatello, Idaho,*	English
Whittier, Norman Bertram,	*Riverside,*	Latin
Wight, Edwin Buckminster, A. B. and A. M., Univ. of Michigan.	*Palo Alto,*	German
Wight, John Kinlay, A. B., Stanford, 1893.	*Palo Alto,*	Law
Wight, Mary Otis,	*Palo Alto,*	German *Sp.*
Wight, Otis Buckminster,	*Palo Alto,*	Physiology
Wigle, Britton Day,	*Palo Alto,*	History
Wigle, Elsie Alice,	*Palo Alto,*	Botany
Wigle, Gilbert Griffin, A. B., Stanford, 1895.	*Palo Alto,*	History
Wilbur, Ray Lyman,	*Riverside,*	Physiology
Wilder, Gertrude Ellen,	*San Jose,*	French

Wilkinson, Frank, A. B., Stanford, 1895.	*Acampo,*	Civil Eng.
Willard, Hattie Mason,	*Palo Alto,*	Education
Williams, Dan Edwin,	*St. Helena,*	English
Williams, Francis Brumley,	*Wickes, Mont.,*	Elec. Eng. *Sp.*
Williams, Grace,	*Redlands,*	English
Williams, Grant Langworthy,	*Palo Alto,*	Latin
Williams, Helen Webster,	*Redlands,*	Latin
Williams, Mary Ida,	*Pasadena,*	Mathematics
Williams, Olive Augusta,	*San Francisco,*	English *Sp.*
Williams, Simeon Waldo,	*San Jose,*	Law
Williams, Thomas Henry,	*Denver, Col.,*	Economics
Williams, Thomas Marion,	*Duo, W. Va.,*	Physiology
Williams, William Grant,	*Ontario,*	Electrical Eng. *Sp.*
Willis, Helen,	*Portland, Or.,*	Latin
Wills, Frank Durack,	*Antioch,*	Law
Wilson, George Benton,	*Los Angeles,*	Economics
Wilson, John Henry,	*Honolulu, H. I.,*	Civil Eng. *Sp.*
Wilson, Norton Parker,	*The Dalles, Or.,*	Elec. Eng. *Sp.*
Winship, Walter Edwin,	*San Diego,*	Mathematics
Wood, Alfred Eugene,	*Palo Alto,*	Mechanical Eng.
Wood, Alfa Retta,	*Colfax, Ia.,*	Latin
Wood, Ella Gertrude,	*Pasadena,*	French
Wood, Henry Adams,	*Pasadena,*	Physics
Wood, Jessie Palen,	*Palo Alto,*	English
Woodburn, Nettie Eudora,	*San Diego,*	English
Woodward, Henry Thomas,	*San Diego,*	Physiology
Woodworth, George Lyman,	*Palo Alto,*	Electrical Eng.
Woolrich, Arthur G.,	*San Francisco,*	Civil Eng.
Woolsey, Walter Elliott,	*Oakland,*	German
Wootten, Frank Bivens,	*Linden,*	History
Workman, William Henry, Jr., A. B., St. Vincent's Coll., 1893.	*Los Angeles,*	Electrical Eng.
Worstell, Bruce G.,	*Wallace, Idaho,*	Physiology
Wright, Annie Louise,	*Mayfield,*	Mathematics
Wright, Charles Frederick,	*Mayfield,*	History
Wright, George Henry Burwell,	*Redlands,*	English
Wright, Max Goethe,	*Indianapolis, Ind.,*	Romanic Lang.
Wright, Samuel Vaughn,	*Mayfield,*	History
Yamagishi, Tenjin,	*Kamakura, Japan,*	Painting *Sp.*
Yocum, Bessie Horton,	*Pasadena,*	History
Yoder, Minnie Brooks,	*Des Moines, Ia.,*	Chemistry

Young, Bertram Nelson,	*Eureka,*	Mechanical Eng.
Young, J. Newton,	*College Park,*	Economics *Sp.*
Young, Lena Calhoun,	*Santa Rosa,*	Education
Young, Stewart Woodford, B. S., Cornell Univ., 1890.	*Palo Alto,*	Chemistry
Young, William George,	*Los Angeles,*	Economics *Sp.*
Young, Willard Tuthill,	*Kelseyville,*	Physiology
Younger, Charles Bruce, Jr.,	*Santa Cruz,*	Economics
Younger, Helen,	*Santa Cruz,*	History
Zion, Edwin Ray, A. B., Stanford, 1894.	*Berkeley,*	Economics
Zumwalt, Don John A. B., Stanford, 1895.	*College Park,*	Civil Eng.

SUMMARIES.

BY CLASSES.

IN GRADUATE STANDING	79
UNDERGRADUATES	815
SPECIAL STUDENTS	206
Total (men, 728; women, 372)	1100

BY MAJOR SUBJECTS.

	Graduate.	Undergraduate.	Special.	Total.	*No. of students in all classes.	*Total reg'tr'n in all classes
Greek	2	13	2	17	48	63
Latin	9	52	1	62	130	197
German	3	34	12	49	437	510
Romanic Lang.	1	14	5	20	288	296
English	11	133	23	167	472	718
Psychology	1	2	—	3	11	14
Ethics	—	3	2	5	96	97
Education	4	28	7	39	158	232
History	9	95	11	115	413	588
Economics	3	55	6	64	255	307
Law	2	73	26	101	129	211
Mathematics	3	24	6	33	207	335
Astronomy	—	1	—	1	29	30
Physics	2	6	3	11	122	132
Chemistry	5	36	6	47	161	220
Botany	—	13	3	16	31	43
Entomology	—	1	2	3	11	11
Horticulture	—	—	1	1	—	—
Hygiene	1	6	5	12	368	401
Physiology	6	60	18	84	130	198
Zoology	6	13	3	22	244	270
Geology	5	7	—	12	113	197
Drawing	2	11	16	29	87	93
Mining Eng.	—	8	2	10	—	—
Civil Eng.	2	45	13	60	142	224
Mechanical Eng.	—	26	13	39	146	207
Electrical Eng.	2	53	23	78	31	78

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* First semester.

BY RESIDENCE.

California	680	Vermont	3
Oregon	60	Arizona	2
Washington	48	Indian Territory	2
Illinois	35	West Virginia	2
New York	25	Florida	1
Iowa	21	Kentucky	1
Missouri	20	Louisiana	1
Colorado	17	Massachusetts	1
Ohio	17	Michigan	1
Indiana	15	Mississippi	1
Utah	15	New Hampshire	1
Nevada	14	Oklahoma	1
Pennsylvania	10	South Carolina	1
Montana	9	South Dakota	1
New Mexico	8	Virginia	1
District of Columbia	7	Wyoming	1
Maine	7	Canada	13
Nebraska	6	Japan	7
Minnesota	6	Brazil	4
Kansas	5	Hawaii	4
Wisconsin	4	Central America	2
Arkansas	3	China	1
Idaho	3	England	1
New Jersey	3	Germany	1
Tennessee	3	Russia	1
Texas	3	Scotland	1

CALIFORNIA BY COUNTIES.

Alameda	40	Sacramento	18
Amador	2	San Benito	1
Butte	5	San Bernardino	18
Contra Costa	3	San Diego	32
Colusa	3	San Francisco	59
Fresno	9	San Joaquin	15
Humboldt	11	San Luis Obispo	5
Kern	2	San Mateo	16
Kings	1	Santa Barbara	14
Lake	4	Santa Clara	241
Los Angeles	62	Santa Cruz	17
Marin	2	Shasta	2
Mariposa	1	Solano	5
Mendocino	4	Sonoma	9
Merced	1	Siskiyou	5
Monterey	3	Stanislaus	6
Napa	10	Sutter	1
Orange	12	Tulare	5
Placer	3	Ventura	2
Plumas	1	Yolo	3
Riverside	22	Yuba	5

Third Annual Commencement.

MAY 30, 1894.

COMMENCEMENT ADDRESS - Professor JOHN CASPER BRANNER
"The Education of the Scientific Man,"

DEGREES CONFERRED.

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In Greek:
- James Blair Newell, *Santa Clara.*
- Lorenzo Adolphus Offield, *Santa Clara.*

In Latin:
- Edward Hickey Barnes, *Newark, O.*
- Bertha de Laguna, *Oakland.*
- *Anna Lena Lewis, *Little Rock, Ark.*
- Harriet A. Nichols, *Pasadena.*
- *Helen Elizabeth Slayton, *Stowe, Vt.*
- Glanville Terrell, *Louisa C. H , Va.*

In German:
- Clarence Alfred Grabill, *Red Oak, Ia.*

In Romanic Languages:
- Laura Frederica de Laguna, *Oakland.*

In English:
- George Henry Brown, *Riverside.*
- Eugenia Beatrice Mabury, *San Jose.*
- Frederick John Teggart, *Belfast, Ireland.*

In Ethics:
- Louis Craig Cornish, *New Bedford, Mass.*
- Julius Cæsar Hammel, *Elberfield, Ind.*

In Education:
- George W. A. Luckey, *Riverside.*
- Will Seymour Monroe, *Pasadena.*
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In History:
- Aylett Rains Cotton, Jr., *San Francisco.*
- Lucile Eaves, *Eugene, Or.*
- James Fyffe Wilson, *Mt. Palatine, Ill.*

In Economies and Social Science:
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- Albert Crane, *Zionsville, Ind.*
- John Albert Keating, *Muskegon, Mich.*
- Carleton Edward Sox, *Albany, Or.*
- Arthur Cook Trumbo, *Columbus Grove, O.*
- Thomas Rawson Warren, *Los Angeles.*
- Percy A. Young, *Albany, Or.*
- Edwin Ray Zion, *Berkeley.*

In Astronomy:
Mary Eunice Edwards, *Westhampton*, *Mass.*
In Chemistry:
Charles Andrew Fife, *Pasadena.*
Charlotte M. Way, B. S., *Tempe*, *Ariz.*
In Botany:
Melville Thurston Cook, *Coffeen*, *Ill.*
In Physiology and Histology:
Charles Dilworth Critchlow, *New Brighton*, *Pa.*
Frederick Harlan Hadley, *Tulare.*
*Henry Powers Hammond, *San Francisco.*
Florence Mabel Holsclaw, *Gilroy.*
Hugo Albert Kiefer, *Los Angeles.*
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John Van Denburgh, *Los Gatos.*
In Geology:
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Robert Morris Drake, *Portland*, *Or.*
In Mechanical Engineering:
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Rea Edwards Maynard, *Los Angeles.*
In Electrical Engineering:
Lucien Howard Gilmore, *Capron*, *Ill.*

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In German:
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Karl G. Rendtorff, *Preetz*, *Germany.*
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Robert Cromwell Root, B. S., *Ontario.*
In Ethics and Ethical Literature:
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In Mathematics:
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In Botany:
Walter Robert Shaw, A. B., *Palo Alto.*
In Entomology:
Willis Grant Johnson, A. B., *Palo Alto.*

---

* Degree conferred Jan. 10, 1894.

In Physiology and Histology:
Henry Powers Hammond, A. B., *San Francisco.*
Clelia Duel Mosher, A. B., *Palo Alto.*

ENGINEER.

In Civil Engineering:
Samuel Benjamin Durand, B. C. E., *Milwaukee, Wis.*

DOCTOR OF PHILOSOPHY.

In Geology:
George Hall Ashley, M. E., A. M., *Rochester, N. Y.*

MID-YEAR CONFERRING OF DEGREES.

JANUARY 9, 1895.

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In Latin:
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In Education:
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Chester Lea Magee, *San Diego.*
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Herbert Spencer Stark, *Cleveland, O.*
In Drawing and Painting:
Elsa Lovina Ames, *Chicago, Ill.*
In Civil Engineering:
Frank Wilkinson, *Acampo.*
Don John Zumwalt, *College Park.*
In Electrical Engineering:
Harry Clinton Thaxter, *Palo Alto.*

Alumni Association.

Organized June 15, 1892.

President, - - - -	Charles Wilson Greene, '92
Vice-President, - - -	Arthur Henry Barnhisel, '93
Secretary, - - -	Jessica Thompson Washburn, '92
Treasurer, - - - - -	Charles Elwood Cox, '93

CONSTITUTION.

In order to perpetuate a feeling of regard for one another, and of attachment to our *Alma Mater*, we do hereby form ourselves into an association to be known as the Alumni Association of Leland Stanford Junior University.

1. All persons who have received a degree from Leland Stanford Junior University are members of this Association.

2. All members of the Faculty are honorary members of this Association.

3. The officers of this Alumni Association shall be a President, Vice-President, Secretary, and Treasurer.

4. There shall be an Executive Committee, to consist of the following persons: the President of the Association, chairman; the Secretary of the Association, secretary; and the Treasurer of the Association.

5. It shall be the duty of the Executive Committee to arrange for the literary programme to be presented on Alumni Day; to arrange for an annual banquet to be given on the evening of Commencement Day; to regulate the finances of the Association; and to perform such other duties as may be imposed upon them by the Association.

6. The officers of the Alumni Association shall be elected by ballot, a majority of all votes cast being necessary for election. Elections shall take place at the annual meeting.

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University Publications.

The Tariff Controversy in the United States, 1789-1833. With a Summary of the Period before the Adoption of the Constitution. By ORRIN LESLIE ELLIOTT, Ph. D. pp. 72. Price, $1.00.

Observations on the Conductivity of a Copper Wire n Various Dielectrics. By FERNANDO SANFORD, M. S. pp. 44.

The American University and the American Man. Second Commencement Address. By GEORGE ELLIOTT HOWARD, A. M. pp. 22. Price, Fifteen Cents.

The University Charter, Etc. Reprint of Circulars and 2.

Exercises of the Opening Day, 1891. [Circular No. 5.]

Specimen Examination Questions. 1892, 1893, 1894 (out of print), 1895 (ready in June).

Schedule of Lectures and Recitations, and Directory, for 1895-96. Price, Five Cents. [Ready May 20.]

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